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MAURITIUS

ANNUAL REPORT
ON THE
MEDICAL & HEALTH DEPARTMENT
1929

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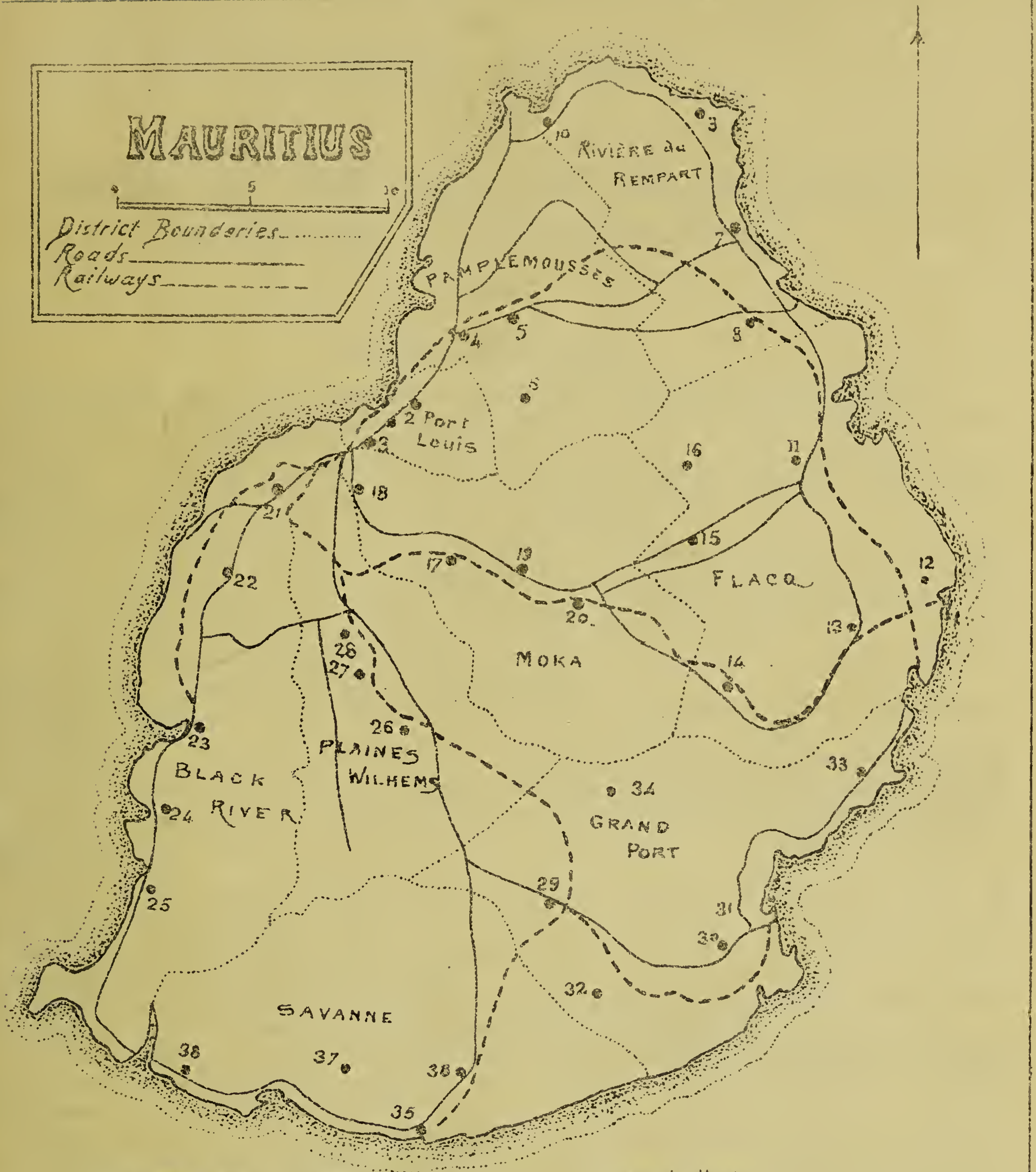

HOSPITALS & DISPENSARIES are shown in the Map by Numbers as indicated below.

PORT LOUIS

Civil Hospital...	1
Eastern Suburb (St François)...	2
Western Suburb (Bell Village)...	3

PAMPLEMOUSSES

Terre Rouge	4
Pamplemousses (Village)	5
Long Mountain (attached to Hospital)...	6

RIVIERE DU REMPART

Poudre d'Or (attached to Hospital)...	7
Ravin	8
Grand Gaube	9
Grand Bay	10

FLACQ

Flacq Hospital...	11
Trou d'Eau Douce... ...	12
Rivière Sèche...	13
Sébastopol...	14
St. Julien...	15
Brisée Verdière...	16

MOKA

Moka Hospital...	17
Pailles	18
St. Pierre	19
Quartier Militaire... ...	20

BLACK RIVER

Petite Rivière...	21
Bambous	22
Tamarin	23
Grande Riviere Noire...	24
Case Noyale...	25

PLAINES WILHEMS

Curepipe...	26
Vacoas...	27
Victoria Hospital (Quatre Bornes)...	28

GRAND PORT

Rose Belle	29
Plaine Magnien... ...	30
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Bois des Amourettes...	33
St. Hubert...	34

SAVANNE

Souillac Hospital... ...	35
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Chemin Grenier ...	37
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COLONY OF MAURITIUS

ANNUAL REPORT

ON THE

MEDICAL AND HEALTH DEPARTMENT

(1st JANUARY TO 31st DECEMBER 1929)

ADMINISTRATION

The Director was on leave from 21st January 1929 until 28th November 1929.

Dr. F. J. R. Momplé, Medical Officer of Health for Plaines Wilhems. acted as Director from 22nd January 1929 to 27th February 1929.

Major R. J. A. MacMillan D.S.O. ; T.D., of the East African Medical Service was seconded for duty as Acting Director of this Department. He assumed duty on 28th February 1929 and left the Colony on 18th November 1929.

Dr. R. Lavoipierre, temporary and provisional Medical Assistant to the Director was awarded a scholarship from the Government Scholarship Fund for further study. He left for the United Kingdom on 5th July 1929 and was replaced as Medical Assistant by Dr. E. de Robillard, Superintendent of the Civil Hospital.

Dr, E. R. Gilmore arrived in the Colony on 11th February 1929 and assumed duty as Medical Officer of Health, Port Louis, on the same day.

Dr. Dyson, Superintendent Mental Hospital, returned from leave and resumed duty on 13th March 1929.

Dr. Herman André returned from leave and resumed duty on 5th January 1929 as Government Medical Officer, Pamplemousses and Superintendent, Leper Hospital. On 2nd March 1929, he was sent on a mission to India to study the leprosy problem ; during his absence, his duties were performed by Dr. F. Bouloux until Dr. André's resumption on 23rd August 1929.

Dr. W. Dupré, former Resident Surgeon, Victoria Hospital, was detailed for duty as Radiologist on 1st November, 1929.

Dr. Ralph Mayer was appointed temporarily and provisionally as Resident Surgeon, Victoria Hospital, on 1st November, 1929.

Dr. Madge was temporarily appointed to the Government Medical Staff on 4th March 1929 and was posted as Assistant Government Medical Officer, Flacq.

Dr. G. Lamberty retired from the service on 4th December 1929 and was temporarily replaced as Government Medical Officer, Flacq, by Dr. R. Laventure who was formerly Government Medical Officer, Black River.

The appointment of Dr. Ph. de Chaumont, temporary Assistant Government Medical Officer, Flacq, terminated on 31st July 1929.

It was found possible during the year to make new arrangements for the performance of the work of Moka hospital and district. The temporary employment of Drs. Clifford Mayer and A. Rey consequently lapsed.

I should like to record my thanks to these gentlemen for their willingness to serve the Department in a temporary capacity, and for the excellent service they rendered while so employed.

2. The professional staff of the Department on 31st December was as follows :—

Director : J. Balfour Kirk, M.B., Ch.B., D.P.H., D.T.M. & H.
Medical Assistant to the Director : Evariste de Robillard, M.R.C.S., L.R.C.P.,
Medical Officer of Health, Port Louis : E. R. Gilmore, M.B , Ch.B., D.P.H , D.T.M.
Medical Officer of Health, Plaines Wilhems : F. J. R. Momplé, M.B., C.M., D.P.H.
Superintendent, Bacteriological Laboratory and Government Analyst : L. G. Barbeau, M.B. C.M., D.P.H.,
Sanitary Warden (Northern Districts) : Vacant—Duties performed by Dr. E. R. Gilmore.
Sanitary Warden (Southern Districts) : A. G. Masson, M.B., Ch.B.
Port Health Officer : L. M. J. Raymond Pilot, M.B., B.S,, M.R.C.S., L.R.C.P., D.T.M. & H.
Superintendent, Mental Hospital : J. D. Dyson, M.B.,B.S., D.P.M., M.R.C.S., L.R.C.P.
Assistant Superintendent, Mental Hospital : H. Molière, M.B., Ch.B., (temporary and provisional.)
Superintendent, Civil Hospital : L. Arthur Célestin, M.R.C.S., L.R.C.P.
1st Resident Surgeon, Civil Hospital : L. N. René Comty, M.B., B.S., M.R.C.S.
2nd Resident Surgeon, Civil Hospital : H. Madge, M.B., B.S., L.R.C.P., M.R.C.S.

Superintendent, Victoria Hospital : Louis Rathier du Vergé, *M.C.*, *M.R.C.S.*, *L.R.C.P.*
Resident Medical Officer, Victoria Hospital : V. Pierre Goupille, M.D. (Paris)
Assistant Resident Surgeon, Victoria Hospital : Ralph Mayer, M.B., B.S.
Police and Prison Surgeon, Port Louis : E. Rama, M.D. (Paris) Medecin Colonial, Sanitaire, Maritime, Médaille d'honneur des Epidémies.
Government Medical Officer, Black River : H. Mollière, M.B., Ch.B., (temporary and provisional.)
Government Medical Officer, Plaines Wilhems : J. J. Maingard, L.M.S,, S.A. London, Medecin Colonial (Paris.)
Superintendent, Leper Hospital : J. H. André, M.R.C.S., L.R.C.P.
Medical Officer i/c Hookworm Branch : A. C. d'Arifat, M.R.C.S, L.R.C.P.

DISTRICT MEDICAL OFFICERS

(Government Medical Officers having charge of a district hospital and of all the dispensaries in their district.)

Pamplemousses : J. H. André, M.R.C.S. L.R.C.P.
Riviere du Rempart : S. Piarroux, L.R.C.P. & S., L.F.P. & S.
Flacq : R. Laventure, M.B. (Montpellier, France.)
Grand Port : A. Y. Cantin, M.R.C.S., L.R.C.P., D.T.M.
Savanne : J. Cantin, M.D. (Paris.)
Moka : R. Pilot, M.D. (Lyons.)

LEGAL

3. No ordinances affecting the Public Health were enacted during the year.

FINANCIAL

4. The revenue of the Colony for the financial year 1928–29 was ...	Rs. 13,322,248
The expenditure on Medical and Sanitary Services out of the Revenue was	2,093,756
The expenditure on Medical and Sanitary Services from the Improvement and Development Fund was	43,412

II.—Public Health

5. For the past two years I have been predicting a rise in the mortality rates of the Colony. The rates for 1929 show an upward tendency in comparison with those of previous years. The Death Rate and the Infantile Mortality rates show a considerable increase. The Birth Rate has decreased from 37.9 per thousand in 1928 to 33.98 per thousand in 1929.

An outbreak of influenza in March became serious enough to justify its description as an epidemic. The disease is not a notifiable one, but the impression gained by those who experienced it was that its effects were widely felt and that a certain amount of disorganisation of the life of the community was attributable to it. Moreover the statistics of deaths from all causes in the Colony showed a very sudden rise during March and April, the figures being:—

January ...	799	July ...	1,114
February ...	675	August ..	1,041
March ...	1,598	September ...	878
April ...	1,702	October ...	910
May ...	998	November ...	836
June ...	979	December ...	885

That this rise was most probably due to influenza and its complications is suggested by a consideration of the fact that deaths due solely to Malaria showed very little departure from the normal.

Sickness, generally, was on the increase. 24,970 persons underwent hospital treatment as compared with the 24,502 of the previous year. The dispensary returns have also shown an increase. There has been a lack of uniformity in the recording of patients treated at dispensaries. Patients undergoing a course of treatment necessitating successive attendances have been recorded as having made only one appearance—the first; the others having been disregarded for statistical purposes. Instructions have been issued to Dispensers to record in future every attendance at dispensaries.

166 patients suffering from malignant disease were admitted to the hospitals, as compared with 134 during 1928. 90 of the tumours were situated in the female genital organs and breast; the stomach and liver accounted for 20; peritoneum and intestinal tract, 25; buccal cavity, 7 and the skin 8. In 16 cases the site was not specified. The non-malignant new growths numbered 66.

The total number of deaths from Cancer in the Colony is given by the Registrar General as 72.

(A).—COMMUNICABLE DISEASES

INSECT-BORNE DISEASES

MALARIA

6. Four species of Anopheles are known to exist in the Colony, viz: *A. costalis*, *A. funestus*, *A. maculipalpis* and *A. mauritianus*. The principal transmitter of malaria is *A. costalis*.

It is possible to record only the number of patients suffering for malaria in hospitals or applying for treatment at dispensaries, and the number of deaths certified by medical practitioners as being due to this disease.

The total number of patients suffering from malaria admitted to the hospitals was 2,754, a decrease of 57 over the figure for the previous year. The case mortality was 2.03%.

The following tabular statement shows the admissions for malaria and deaths ascribed to it during this and the preceding year.

Institutions	Malaria			
	Admissions		Deaths	
—	1928	1929	1928	1929
Civil Hospital	805	701	35	25
Port Louis Prison	33	51	...	2
Long Mountain Hospital ...	286	148	2	1
Poudre d'Or Hospital	347	306	4	3
Flacq Hospital	183	409	2	7
Mahebourg Hospital	109	123	7	2
Souillac Hospital	535	404	5	8
Victoria Hospital	425	424	2	6
Beau Bassin Prison	28	86	...	...
Moka Hospital	13	33	...	...
Mental Hospital	47	54	1	2
Barkly Industrial School ...	...	15	...	...
	2,811	2,754	58	56

The total number of deaths in the Colony from malaria and malarial cachexia, 2,310, is equivalent to a death rate of 5.7 ‰ living. The rate for 1928 was 6 ‰.

The splenic index of the children attending certain district schools is as follows:—

District	1927	1928	1929
—	%	%	%
Grand Port	21.9	24.95	21.36
Savanne	12.9	13.02	17.72
Plaines Wilhems ...	1.5	1.42	1.41
Moka	3.8	4.6	2.79
Flacq	27.6	...	23.11

PLAGUE

7. The last notification of human plague in the Colony was made on the 16th September 1927. This case was a sporadic one, and at the time of its occurrence there was no evidence of plague amongst rats. Since then no further sign of plague has appeared, either amongst rats or human beings.

Notwithstanding this favourable position, plague preventive measures were continued. The report of the Medical Officer of Health, Port Louis, gives an account of some of these.

TYPHUS FEVER

8. No case of this disease was notified during the year. (See the report of the Government Bacteriologist).

(B).—INFECTIOUS DISEASES

SMALL-POX

9. There has been no small-pox in the Colony since 1913. 9,439 children were vaccinated during 1929 by the public vaccinators. The data are given hereunder:—

Successful vaccinations on 1st attendance	8,756	
„ „ 2nd and subsequent attendances	563	
		9,319
Unsuccessful vaccination		111
Vaccinations in which the results could not be ascertained		9
Total ...		9,439

The proportion of children vaccinated by government vaccinators to live births is 68.54%. The general situation regarding vaccination and re-vaccination against small-pox in the Colony is no less disquieting than it has been for several years past. There is no reason to believe that the freedom which Mauritius has enjoyed from small-pox in recent times will continue unless the quarantine measures are reinforced by the vaccination and the re-vaccination of the whole population.

ENTERIC FEVER

10. 210 cases were notified. 68 of them received hospital treatment with a case mortality rate of 29.41%.

The reports of the Medical Officers of Health and the Sanitary Wardens indicate that infection at no time took on an epidemic form.

DIPHTHERIA

11. 73 cases of diphtheria were notified in 1929. The disease appears to bear most heavily on those living in the cooler regions of the Colony.

PUERPERAL STATE

12. 168 deaths were registered as being due to the puerperal state.

The deaths are classified as under :—

Puerperal albuminuria and convulsions	20
Puerperal embolism and sudden death ...	1
Puerperal haemorrhage	8
Puerperal sepsis	39
Abortion	5
Other accidents of pregnancy	3
Other accidents of child birth	92

30 cases of puerperal septicaemia, of which 13 proved fatal, were treated in hospital—a case mortality of 43.32%.

The mortality rate of child birth in 1929 was 13.5 per °/₀₀. of total deaths.

The causes of the high mortality among the mothers of the Colony are doubtless many but the principal would appear to be lack of skilled medical attention at childbirth. This is by no means entirely due to a shortage of doctors in the Colony, and must be explained by a survival of archaic prejudice amongst a large proportion of the people.

It is important to have some index of the maternal mortality in the Colony. Several ways of expressing this may be considered. The maternal mortality rate may be expressed as the ratio of the number of deaths ascribed to the puerperal state to an arbitrarily chosen number (generally 1,000) of

(*a*) all deaths from all causes,
(*b*) female deaths from all causes,
(*c*) all births (including still births),
(*d*) live births only.

The index calculated on (a) and (b) is liable to great modification through causes quite unconnected with the puerperal state. A fatal epidemic, for instance, may greatly lower this index and invalidate comparison with indices ascertained under normal conditions. If we base our index on the number of live births only we are apt to exclude the type of case which is most likely to cause a fatal issue to the mother. The index liable to least variation under existing circumstances appears to be the ratio of deaths ascribed to the puerperal state to every 1,000 births occurring in the Colony. This is the index which will be calculated in this and subsequent reports.

The returns of the Registrar General show that 13,771 live births and 1,182 still-births occurred during the year 1929—making a total number of notified births of 14,953. The number of deaths ascribed to the puerperal state is 168; making a maternal mortality index of 11.2 per thousand. This is undoubtedly high, though I have been unable to obtain comparable figures for other countries. Jellet, however, quoted by Haslam, has shown that the Maternal Death Rate per 1,000 live births is, for part of the British Empire comprising England and Wales, Ireland (North and South), Scotland, New Zealand and Australia, 4.22. The rate for Mauritius calculated upon the same basis is 12.2.

If we analyse the recorded statistics as Haslam* has done with those of other countries and group them into four classes, A, including various accidents during pregancy, B, comprising toxic conditions of the mother during that period, C, accidents of childbirth and D, puerperal sepsis, we arrive at the following grouping :—

A. 5+3 = 8
B. 20 = 20
C. 1 + 8+92=101
D. 39 = 39

168

As Haslam states "it seems certain that many of these accidents (i.e. of Group "A") could be foreseen, and many of those toxic states (Group "B") be recognised, at a stage when preventive action is possible, if only regular medical supervision throughout pregnancy were the rule instead of the exception. Group C would in all probabibility be reduced by the same prenatal supervision which should eliminate the factor of "emergency" from many difficult deliveries". The "D" group represents the number of deaths due to infection and points to the need of strict antisepsis in the conduct of obstetrical work.

---

* Haslam, J. F. C., M.C., Recent advances in Preventive Medicine London, I. & A. Churchill, 1930.

The lines on which improvement of this state of affairs may be organised lie in several directions. The first advance will occur when the general public realise the need for skilled supervision of the pregnant woman throughout the period of her pregnancy. As soon as this need is felt there will arise an insistent demand for the means of supervision and an intelligent employment of the provision made. There is no better way of demonstrating the need than by providing the nucleus of such service in certain parts of the Colony and giving the population an opportunity of comparing the results so obtained with those of other parts in which these services are not available. Since 1926 the inhabitants of certain parts of the Colony have had the advantage of this kind of work so far as it can be applied at present through the Child Welfare, and the figures, though small, are significant. During the period 1926 to 1930 the Child Welfare has attended 1228 women in their confinements. A certain amount of ante-natal work is also performed. Out of 1228 mothers attended 6 died. If we calculate the maternal mortality in these cases we find that it amounts to 4.8 per 1000. It is admitted that this figure is lower than what would be obtained if all the mothers could be followed up, but even when ample allowance is made for deaths of mothers which may not be included here, the difference between this figure and that of the general maternal mortality already given is enough to encourage the hope that work along this direction will be productive of the happiest results as soon as the general population are advanced enough to take full advantage of it.

The Child Welfare is a voluntary organisation. An organisation carrying out somewhat similar work flourishes in Port Louis in the Oeuvre Pasteur de la Goutte de Lait. Both of these are materially assisted by the government. But the government realises that work of this kind should form an integral part of the activities of the health department, and, if the Health Centre System advocated by me should be found to be a practical basis of re-organisation, government will have in this organisation the mechanism for bringing the resources of the department to the aid of expectant mothers in a much more widely extended zone than can be reached by voluntary agencies at the present time.

MEASLES

13. 24 cases of measles were notified during the year, 20 at Port Louis, 1 at Rose Belle and 3 at Vacoas.

It was considered that no useful purpose would be served by keeping measles, which is endemic in the Colony, on the list of quarantinable diseases, and the offending Regulations were repealed by G. N. No. 75 of the 30th March 1929.

An outbreak occurred about October, in places as widely distant as Port Louis and New Grove. No deaths were reported as having been due to measles.

ERYSIPELAS

14. 43 cases were notified, compared with 27 in 1928. 15 deaths were registered.

PULMONARY TUBERCULOSIS

15. Out of the 12,413 deaths of 1929, 513 were due to pulmonary tuberculosis giving a death rate of 12.56 per 10,000 inhabitants.

LEPROSY

16. Six new patients were admitted into the Leper Hospital in the course of the year, three of these came from Oil Islands and the three Mauritius patients were resident in the following districts :—Plaines Wilhems 1, Grand Port 1 and Pamplemousses 1.

The place of detention is the Powder Mills Leper Hospital.

CHICKEN POX

17. Seven cases of this disease were treated at the Beau Bassin Prison Hospital and 1 at the Mental Hospital.

VENEREAL DISEASES

18. 314 cases of syphilis, with 7 deaths, were admitted to the hospitals during the year. The details are given in the return of diseases (Hospitals). 244 cases of gonorrhœa were treated, and 161 cases of soft chancre.

C.—HELMINTHIC DISEASES

ANKYLOSTOMIASIS

19. The Annual Report on the hookworm campaign is printed separately (Appendix II).

SCHISTOSOMIASIS

20. 96 cases of this condition were treated in the hospitals during the year, and 56 at the dispensaries. The local intermediate host has not yet been determined.

VITAL STATISTICS

21. The distribution of the population and its density in each district are shown hereunder.

ESTIMATED POPULATION OF MAURITIUS ON THE 31ST DECEMBER 1929

Districts	Area in square miles	General Population			Indian Population			Total Population			Density per square mile
		Males	Females	Total	Males	Females	Total	Males	Females	Total	
Port Louis ...	16	16,389	14,707	31,096	11,869	11,182	23,051	28,258	25,889	54,147	3,384
Pamplemousses ...	69	3,309	3,208	6,517	15,994	15,039	31,033	19,303	18,247	37,550	544
Rivière du Rempart...	57½	3,229	2,963	6,192	14,592	13,717	28,309	17,821	16,680	34,501	600
Flacq	115	5,716	5,317	11,033	22,820	21,225	44,045	28,536	26,542	55,078	478.94
Grand Port ...	101	7,081	6,718	13,799	19,980	18,184	38,164	27,061	24,902	51,963	514.48
Savanne ...	93½	4,010	3,892	7,902	14,475	12,905	27,380	18,485	16,797	35,282	382.50
Plaines Wilhems ...	78	17,181	19,541	36,722	26,869	25,745	52,614	44,050	45,286	89,336	1,145.33
Moka	89	2,932	3,046	5,978	14,363	13,264	27,627	17,295	16,310	33,605	377.58
Black River ...	101	2,713	2,599	5,312	4,585	4,190	8,775	7,298	6,789	14,087	139.47
Grand Total ...	720	62,560	61,991	124,551	145,547	135,451	280,998	208,107	197,442	405,549	563.26(mean)

The chief feature of interest here is the high density of population : 563.26 per square mile.

MARRIAGES

22. 1,521 marriages were celebrated in 1929 as compared with 1,566 in 1928 ; showing a decrease of 45. This is equivalent to a marriage rate (number of persons married to every thousand of population) of 3.7 °/₀₀.

BIRTHS

23. The total number of births for the year was 13,771 (6,983 males and 6,788 females). 4,637 of these occurred in the General, and 9,134 in the Indian population. The birth rate was 33.98 °/₀₀.

The District birth-rates (on population as at 1st January of each year) and the five-year mean rates are as follows ;—

District	1925	1926	1927	1928	1929	Mean o/oo
Port Louis ...	42.0	39.5	36.0	38.4	35.6	38.30
Pamplemousses ...	39.8	39.2	33.3	32.6	31.2	35.20
Riv. du Rempart ...	43.6	41.2	34.9	38.7	35.7	38.82
Flacq ...	42.0	35.4	31.1	31.5	29.6	33.92
Grand Port ...	40.7	38.0	31.0	37.3	32.4	35.88
Savanne ...	39.4	34,5	30.7	39.5	31.3	35.08
Plaines Wilhems ...	47.2	44.9	40.3	42.7	39.1	42.84
Moka ...	46.6	40.5	36.0	39.7	33.7	39.30
Black River ...	32.9	33.2	29.0	36.8	30.3	32.44
Whole Colony ...	42.6	39.4	34.5	37.9	33.98	37.67

It will be observed that the birth-rate was lower than that of last year.

DEATHS

24. During the year 1929 the total number of deaths was 12,413 (6,535 males and 5,878 females ; 3,512 in the General and 8,901 in the Indian population). This number is an increase of 1,071 over the total deaths of 1928.

The death rate for the Colony was 30.63 compared with 28.2 o/oo for 1928 and with 26.1 o/oo for the quinquennial period preceding 1928. The month of maximum mortality was April whilst in 1928 it was July.

The following table shows the district death-rates* yearly for the five yearly periods 1925–29 and the average rates for the same period :—

Districts	1925	1926	1927	1928	1929	Average o/oo
Port Louis ...	26.1	28.0	27.7	32.1	35.0	29.78
Pamplemousses ...	26.5	28.8	33.2	40.1	37.8	33.28
Riv. du Rempart ..	23.3	25.6	25.5	26.4	28.1	25.78
Flacq ...	24.8	25.7	27.9	33.1	33.4	28.98
Grand Port ...	26.0	29.6	24.5	27.1	31.7	27.98
Savanne ...	24.1	25.4	24.1	27.0	30.6	26.24
Plaines Wilhems ...	19.4	18.4	18.1	19.0	22.2	19.42
Moka ...	21.8	22.8	25.8	26.6	28.9	25.18
Black River ...	32.4	33.2	28.5	34.0	44.0	34.42
Whole Colony ...	24.1	25.3	25.1	28.2	30.63	26.33

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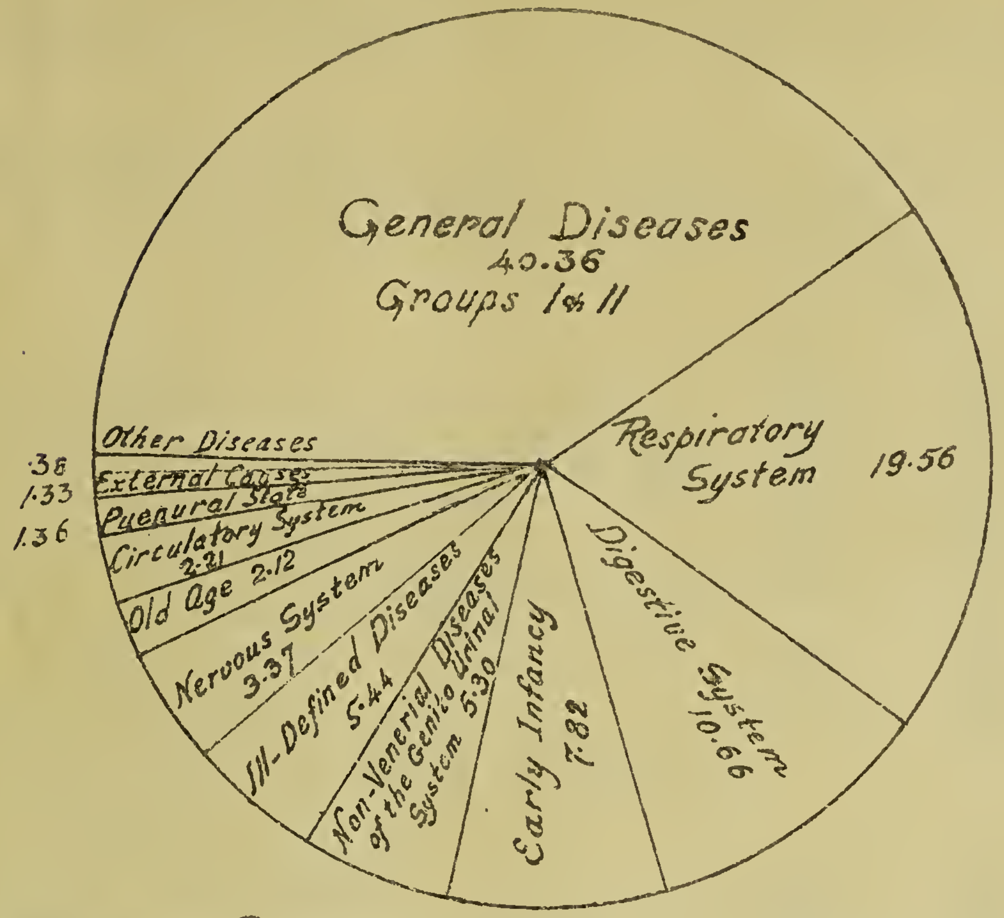
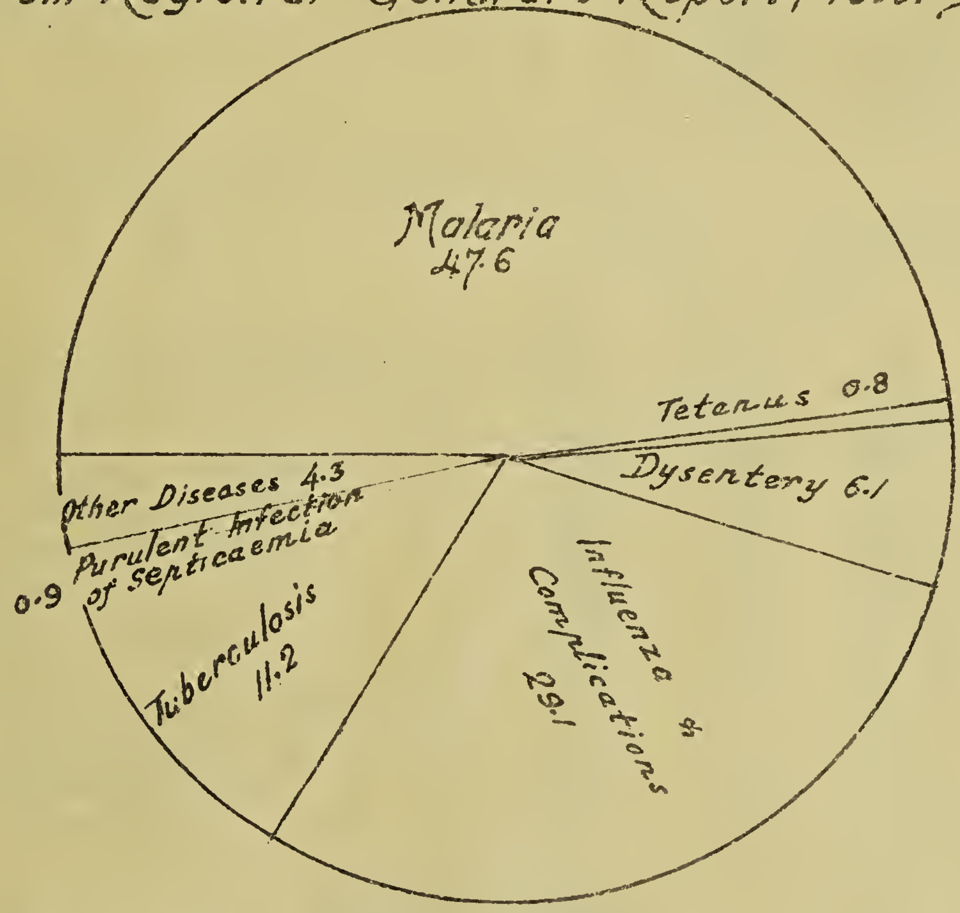
* These are crude death rates, i.e. death irrespective of any consideration as to whether they are indigenous to the district or imported from another district.

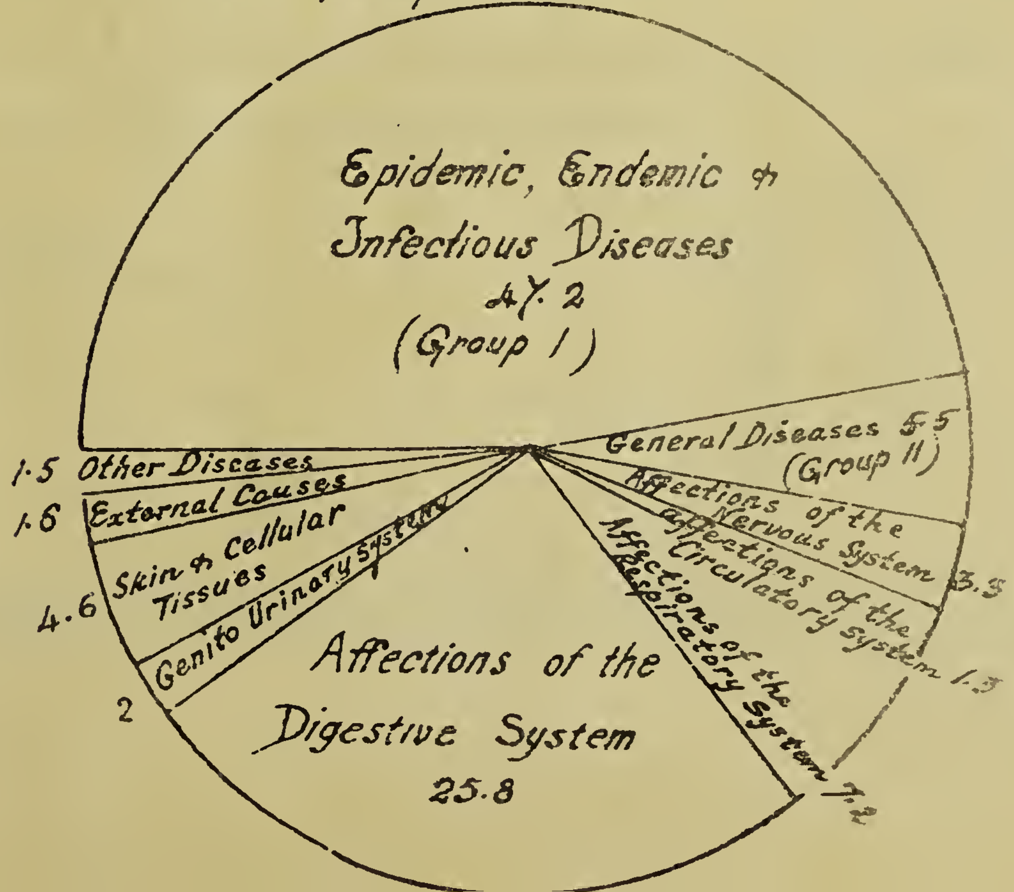
CLASSIFICATION OF TOTAL DEATHS (12,413)
from
REGISTRAR GENERAL'S REPORT



Classification of Deaths due to Communicable Diseases (Group I) from Registrar General's Report, Total Deaths 4.762



Diseases in Outpatient Population treated at Public Dispensaries.



The death-rate for Plaines Wilhems is the lowest death-rate of all the districts of the Colony.

The next table, with the figures for 1928, inserted for purposes of easy comparison, summarises the causes of death and the rates in the usual groups* :—

Group	No. of deaths		Rate o/oo	
	1928	1929	1928	1929
I. General Diseases	4,014	4,752	10.0	11.7
II. General Diseases (not including above) ...	226	258	.6	.6
III. Diseases of the nervous system and sense organs	415	419	1.0	1.0
IV. Diseases of the circulatory system ...	221	275	.5	.7
V. Diseases of the respiratory system ...	1,754	2,428	4.4	6.0
VI. Diseases of the digestive system... ...	1,459	1,323	3.6	3.3
VII. Non-Venereal Diseases of the genito-urinary system and annexa	687	669	1.7	1.7
VIII. The puerperal state	211	168	.5	.4
IX. Diseases of the skin and cellular tissue ...	67	42	.2	.1
X. Diseases of the bones and of the organs of locomotion	4	3	.0	.0
XI. Congenital malformations	3	3	.0	.0
XII. Diseases of early infancy	1,115	970	2.8	2.4
XIII. Old age	389	263	1.0	.7
XIV. Affections produced by external causes ...	167	165	.4	.4
XV. Ill-defined causes	610	675	1.5	1.7
	11,342	12,413	28.2	30.7

The more notable causes of death were as under :—

Diseases	No. of deaths		Rate per o/oo living	
	1928	1929	1928	1929
Malaria and malarial cachexia ...	2,424	2,310	6.	5.70
Pneumonia and broncho-pneumonia	1,117	1,690	2.74	4.17
Influenza	435	1,382	1.07	3.41
Diseases of early infancy ...	1,115	970	2.76	2.14
Phthisis and tuberculosis ..	768	533	1.9	1.31
Diarrhœa and Enteritis ...	1,028	926	2.54	2.03
Bronchitis	495	555	1.22	1.36
Old age and debility	776	703	1.92	1.73
Dysentery	364	288	.9	.71
Albuminuria, Bright's disease, nephritis and uræmia	657	627	1.62	1.54
Heart diseases (organic) ...	134	183	.3	.45
The puerperal state	211	168	.5	.41

INFANTILE MORTALIY

25. The infantile mortality rate is the number of deaths of infants under one year of age occurring in any year for every thousand live births registered during the same year.

The rate for 1929 was 132.23 °/oo as compared with 125.54 °/oo for 1928.

The deaths under 5 years were distributed as follows :—

	Males	Females	Total
Under 1 year	1,022	799	1,821
1 year and under 2 years	324	353	677
2 years „ 3 „	257	291	548
3 years „ 4 „	180	219	399
4 years „ 5 „	103	136	239
	1,886	1,798	3,684

---

* The grouping of causes of death here followed is that adopted by the Registrar General in his annual report, in accordance with the classification adopted by the Registrar General of England based on the third decennial revision by the International Commission, Paris, 1920. Influenza, Whooping Cough, Tuberculosis are included under General Diseases. (Group 1).

The following table shows the grouping of those deaths according to the causes inscribed on the death certificates:—

Cause of death	Under 1 year	1 to under 5 years
General Diseases	381	779
General diseases not included above	1	15
Diseases of the nervous system and organs of the special senses	31	76
Diseases of the circulatory system	1	2
Diseases of the respiratory system	167	363
Diseases of the digestive system	206	319
Non-venereal diseases of the genito-urinary system and annexa	1	29
Diseases of the skin and cellular tissue... ...	5	2
Diseases of the bones and organs of locomotion ...	...	1
Malformations	3	...
Diseases of early infancy	970	...
Affections produced by external causes... ...	8	29
Ill-defined causes	20	153
All causes	1,794	1,768

The distribution of the deaths attributed to the diseases of early infancy and a comparison of these figures with those of 1928 is shown below:—

Designation of diseases and accidents	1928	1929
Congenital debility...	1,074	908
Premature birth	17	45
Atelectasis	9	11
Injuries at birth	4	2
Diseases of umbilicus, etc.	8	4
Other diseases peculiar to early infancy ...	3	...
Total ...	1115	970

STILL-BIRTHS

2. A still-birth is defined by the Registrar General as "a child born dead at or after the seventh month of pregnancy."

The number of still-births registered during 1929 is as under:—

District	Males		Females		Total	
	1928	1929	1928	1929	1928	1929
Port Louis ...	80	78	68	76	148	154
Pamplemousses ...	66	59	46	49	112	108
Riv. du Rempart ...	54	62	46	59	100	121
Flacq	142	94	98	71	240	165
Grand Port ...	96	76	91	61	187	137
Savanne	55	47	59	41	114	88
Plaines Wilhems ...	125	144	122	93	247	237
Moka	70	75	66	49	136	124
Black River ...	38	24	32	24	70	48
Total ...	726	659	628	523	1,354	1,182

It is equivalent to 85.8 ‰ of live Births, for the same period, as compared with 89.04 ‰ for 1928.

The still-births are distributed as follows for the two great classes of the population.

	Male	Female	Total
General population ...	152	123	275
Indian population ...	507	400	907
Total ...	659	523	1,182

III.—Hygiene and Sanitation

INSECT-BORNE DISEASES

MALARIA

27. The Anti-Malarial work carried out by the department may best be considered under two headings:

(a) Maintenance.
(b) New works.

Maintenance

Drains and Canalised Streams upkept.

District	Feet
Port Louis	186,331
Pamplemousses	237,885
Rivière du Rempart	21,775
Plaines Wilhems	378,171
Moka	278,313
Flacq	166,200
Savanne	37,454
Black River	68,885
Grand Port	140,983
Total	1,515,997

Very little new work was undertaken by the Special Anti-Malarial Service (Mac Gregor Campaign). Before 1929 the Special Service maintained only the works which had been constructed by it, old works in the zone being maintained by the Sanitary Staff of the respective districts in which these works occurred. During 1929 it was considered advisable to entrust all anti-malarial works within the 600 foot contour line to one organisation, and the Special Service took over these at the beginning of July.

New Works

In accordance with the policy of the campaign, new works were confined to the central zone. They mostly took the form of completing the drainage of the Mesnil watershed and the table hereunder shows the monthly progress attained.

The value of this work has been appreciated by the public who have co-operated harmoniously with the department in many ways. Much credit for this is due to the Board of Curepipe. The Board have not only been of the greatest assistance indirectly, but have themselves undertaken certain works either complementary to or forming an integral part of the scheme. The Railway Department have also lent their co-operation.

Vertical drainage was successfully applied to certain areas near the Corps de Garde Mountain. It is quite possible that this method of dealing with difficult areas may be widely applicable. If so, the cost of reclamation should be greatly reduced.

The engineering survey of the inland winter refuges was continued throughout the year. This undertaking has proved to be more difficult and time-consuming than we expected it to be, and there was still an appreciable amount of work left uncompleted by the end of the year.

Table showing the monthly progress of the Anti-Malarial Works undertaken during 1929.

Month	Locality	Marshes, Depressions, etc. filled in	Drains constructed and reconstructed	Streams cleaned graded and trained
January ...	Curepipe Town	Nil	The bed of Mesnil River in the eastern branch was deepened 3 ft. and widened 4½ feet on a length of 202 feet	Nil
February ..	Nil	Nil	......	Nil
March ...	Nil	Nil	......	Nil
April ...	Curepipe Urban Area	Nil	Mesnil River and its branches were deepened 3 feet and made 3 feet wider along a length of 400 feet while at other parts they were deepened 4 feet and widened 2 feet along a length of 600 feet.	Nil
May ...	Curepipe Town	Nil	Mesnil River and its branches were deepened, widened and graded as follows ; On a length of 215 feet by 4 feet deep and 2.6 feet wide. On a length of 250 feet by 4 feet deep and two feet wide. On a length of 425 feet by 2.6 feet deep and 1.6 ft. wide.	Mesnil River graded
June ...	Curepipe Town	Nil	Bed and banks of Mesnil River and branches were deepened 4 feet and widened 3 feet along a length of 100 feet in rock, deepened 4 ft. and widened 2 feet along a length of 400 feet.	Nil
do ...	Curepipe Town	Nil	......	Banks widened and shoped in various places, total bulk of materials removed 1,500 cubic yards.

BUREAU OF HYGIE... LIBRARY

Month	Locality	Marshes, Depressions etc. filled in	Drains contructed and reconstructed	Streams cleaned graded and train
July ...	Curepipe Town	Nil	Bed of Mesnil River deepened 4 ft. and banks widened 2 feet on a length of 490 ft. Bed deepened 3 feet and banks widened 2 ft. on a length of 350 ft.	Nil
August ...	Curepipe Town	Nil	Main stream deepened 7 ft. 6 inch. and widened 7 feet over a length of 115 ft; deepened 6 feet 3 inch. and widened 7 ft. over a length of 150 ft; deepened 3 feet 6 inch. and widened 4 feet on a length of 150 feet; deepened 2 feet on a length of 175 feet. Branches deepened 2 ft. and widened 1 ft. over a length of 175 ft.; deepened 2 feet and widened 2 ft. on a length of 86 feet and deepened 3 ft. and widened 2 ft. over 475 ft.	Nil
September ...	do. ...	Nil	Mesnil River and branches were deepened 4 ft. and widened 5 ft. on a length of 540 ft.; deepened 3ft. 6 inch. and widened 4 ft. 6 inch. on a length of 700 ft. Deepened 3 ft. and widened 3 ft. 6 inch. on a length of 200 ft.	Nil
October ...	Curepipe Town	Nil	Mesnil River and its branches trained and canalised as follows:— (*a*) Bed and banks deepened 3 ft. and widened 4 feet over a length of 146 ft. (*b*) Deepened 7 feet and widened 6 ft. over a length of 100 ft. (*c*) Deepened 5 feet 6 inch. and widened 6 ft. over a length of 70 ft. (*d*) Deepened 3 ft. and widened 3 ft. over a length of 264 ft.	Nil
	Plaines Wilhems, Corps de Garde Mountain Eastern Slopes	Filling 3 pools: 15 x 10 x 2 ft; 30 x 20 x 3 ft; 30 x 27 x 3 ft. Filling holes and depressions of an aggregate surface area of 6428 sq. ft.	(*a*) Cutting a drain 310 ft. long 3 ft. 6 in. deep with a width of 5 ft. at the top and 18 in. at the bottom. (*b*) Cutting a drain 145 ft. long by 3 ft. deep with 4 ft. at the top and 18 inches at the bottom. (*c*) Constructing a rubble drain 88 x 5 x 2 ft. (*d*) Digging a rubble pit for vertical drainage 6 x 6 x 10 ft.	
November ...	Curepipe Town	Nil	*Mesnil Stream canalisation Works*: (*a*) Cutting a channel 7 ft. 6 in. deep and 5′ 6″ wide in the bed of the river along a length of 200 ft. (*b*) Cutting a channel 3 ft. deep and 3 ft. wide in the river bed along a further length of 200 ft.	Nil
	Corps de Garde Mountain Slopes	Filling holes & depressions measuring a total surface area 7,200 sq. ft. on an average depth of 3 ft.	(*c*) Construction of 451 ft. of covered drains. (*d*) Construction of a well for vertical drainage 16′ deep by 7 ft. long and 6 ft. wide. *e* Cutting surface drain 610 ft. long by 3′ 6″ deep and 4′ wide at the top.	
December ...	Curepipe Town	Nil	(*a*) Cutting a channel 3′ deep and 2′ wide at the bed of River Mesnil on a length of 400 ft. (*b*) Cutting a channel 4 ft. deep and 4 ft. wide on a length of 150 ft.	Nil

PLAGUE

28. Routine rodent examination was discontinued in the rural districts but was maintained in Port Louis and Plaines Wilhems.

The following tables record the work done.

DESTRUCTION OF RODENTS

Port Louis	42,490
Plaines Wilhems	20,032
Total ...	62,522

RODENTS MICROSCOPICALLY EXAMINED

District	Examined	Infected	Infection Rate
Port Louis ...	27,691	Nil	Nil
Plaines Wilhems ...	12,976	Nil	Nil

The report of the Medical Officer of Health, Port Louis, gives further details.

HELMINTHIC INFECTIONS

ANKYLOSTOMIASIS

29. The report of the Medical Officer in charge of the Ankylostomiasis Campaign is printed as an appendix.

SCHISTOSOMIASIS

30. There is no advance to report regarding this subject.

ENTERIC FEVER

31. The cases of this disease were investigated along the usual lines without any clue being obtained regarding the source of the infection. The carrier problem has never been made the subject of a searching local investigation although much of the enteric fever is thought to originate from human carriers.

GENERAL MEASURES OF SANITATION

NIGHT SOIL AND CONSERVANCY

32. The report of the Medical Officer of Health describes the night soil and conservancy work done by the Department in Port Louis.

The Night Soil Service at Curepipe is also carried out by the Health Department. Some 1,010 services are performed there daily on an average.

In other parts of the Colony where pail services exist. the work has been done either by the local authority e.g. Rose Hill—Beau Bassin Board of Commissioners, or by contractors working under government supervision. The services have been satisfactory upon the whole.

The pit latrine is beginning to develop sanitary features of its own—chiefly in the direction of maintenance. If a pit latrine is not habitually used, and is allowed to lapse into a state of neglect through lack of maintenance, water may accumulate in the pit which then becomes a serious mosquito nuisance. A latrine improperly used, and not kept clean may itself become a focus of infection of hookworm disease. If fly breeding is not prevented by the addition of crude oil to the pit contents when necessary, a plague of flies may result. In a general way it may be stated that the majority of the population in rural areas do not yet appreciate the great importance of adequate maintenance of their latrines and there is still a good deal of spade work to be done in the way of inducing the rural population to use their latrines habitually.

In this connection, the Hookworm Campaign is a great educational factor while the work of the Sanitary Inspector should not be overlooked.

If the rural population could be induced to make a habit of using its pit latrines it would take proper steps for their maintenance. A neglected pit latrine, only occasionally used, as I have mentioned above, is a dangerous thing—possibly more dangerous than occasionally fouled surface soil, but when the pit latrine is brought into regular use, it becomes a definite sanitary asset whose value increases with the degree of intelligence of the users.

COLLECTION AND DISPOSAL OF REFUSE

33. In Port Louis the town refuse, collected daily from all parts of the town, is still being used for the filling in of large holes. Port Louis and the chain of villages lying along the main road from Rose Belle to Mahebourg are the only places where the Scavenging Service is carried out by the Sanitary Department. In other places the work is done either by the Local Authority or by Contractors working under the supervision of the Sanitary Department.

WATER SUPPLIES

34. The Medical Officer of Health's report records the condition of affairs in Port Louis.

The Northern Districts have now a satisfactory piped supply.

In the South, improvements have been made, but there are still places where the supply is very unsatisfactory.

LABOUR CONDITIONS

35. From the reports of the Medical Officers concerned it would appear that the general hygienic conditions under which contracted servants are housed on estates have been generally satisfactory.

With the exception of the Influenza epidemic mentioned in para. 5 there have been no widespread epidemics in the rural areas and the most insidious and important infections from the economic point of view are hookworm infection and malaria both of which are endemic, and practically widespread.

FOOD IN RELATION TO HEALTH AND DISEASE

MARKETS AND ABATTOIRS

36. There are 6 public and 7 private abattoirs in the Colony. The public abattoirs administered by the Municipality of Port Louis, the boards of Beau Bassin and Rose Hill and Curepipe are each controlled by a veterinary officer.

The other abattoirs are conducted under the supervision of the sanitary staff.

The quality of the public milk supply is controlled by the medical and health department.

Appendix III gives the details of action taken with reference to other types of food.

MEASURES TAKEN TO SPREAD THE KNOWLEDGE OF HYGIENE AND SANITATION

37. Drs. d'Arifat and Barbeau, in conducting the Hookworm and Anti-Malarial Campaigns respectively, give public lectures and talks on hygiene and sanitation. The cinema is used in connection with these campaigns. There can be little doubt that these activities have had a beneficial effect in stimulating the public interest in the art of keeping well.

Hygiene forms an integral part of the instruction in primary and secondary schools—but there is a tendency to talk it instead of to live it. There is little use in describing the evils of soil pollution to the children of a school and of piously exhorting them always to use latrines for the needs of nature while the school latrine continues to be kept in a perfectly nauseating condition.

TRAINING OF SANITARY PERSONNEL

38. The Medical Officer of Health Port Louis and the Acting Chief Sanitary Inspector conducted a course of lectures for the Sanitary Staff in the Northern part of the Island while the Sanitary Warden, South, held classes at Rose Belle for the staff of the Southern Districts.

RECOMMENDATIONS FOR FUTURE WORK

39. The Commission appointed to inquire into the possibility of increasing the efficiency and reducing the cost of this department and to make recommendations accordingly has not yet completed its task.

IV.—Port Health Work and Administration

40. The following table summarises the work done by the Port Sanitary Authority.

VESSELS ARRIVING		CREW EXAMINED		PASSENGERS EXAMINED	
Sailing craft	Steamers	Sailing craft	Steamers	Sailing craft	Steamers
20	202	246	16,124	424	3,553

Vessels given pratique on arrival	Vessels given pratique after disinfection	Vessel refusing pratique	Vessels claytonised at request of owners
175	46	1	8

V.—MATERNITY AND CHILD WELFARE

41. The work of the Child Welfare and the Oeuvre Pasteur de la Goutte de Lait has been mentioned in paragraph 12. These bodies each issue reports of their work which requires no further reference here.

VI.—THE MIDWIVES BOARD

42. This Board held 7 sittings during the year. The composition of the Board was as follows:—

The Director, Medical and Health Department,—*Chairman.*
The Medical Superintendent, Civil Hospital.
The Medical Superintendent, Victoria Hospital.
The Honourable Dr. E. Laurent.
Dr. E. L. de Chazal, C.B.E.

10 applications for registration were considered, and the Board being satisfied that the applicants were of good character and otherwise eligible ordered that their names be entered on the Register of Midwives.

9 candidates were selected for training as midwives in the different hospitals in the Colony. On the 19th February and 20th August, the Board held an examination for the award of certificates as Second Class Midwives; out of 16 candidates, 11 succeeded in obtaining their certificates (six in February and 5 in August.)

The Regulations published under G. N. No. 180 of 30th July 1927 provide for two classes of midwife. The first class for literate persons of a good general education, the second class for women illiterate or uneducated but of known respectability and capacity. The policy of the Board is, natually, to encourage the training of Midwives of the first class rather than those of the second, but local conditions make the recognition of a second class indispensable in the meantime.

VII.—Hospitals.

43. The work of the hospitals during 1929 is summarised in the table hereunder and in Appendix.

REPORT ON HOSPITAL WORK FOR THE YEAR 1929.

Hospitals	Patients remaining on 31.12.28	New admissions	Deaths	Patients remaining on 31.12.29	No. of beds	No. of surgical operations	Particular diseases causing largest No. of admissions	Particular diseases causing largest No. of deaths
Civil ...	143	7,052	435	159	282	1,422	Malaria, Tuberculosis, Ankylostomiasis, Influenza, and Abscess	Pulmonary Tuberculosis, Pneumonia and Influenza
Port Louis Prison ...	2	222	3	4	16	9	Malaria, Influenza, Dysentery and Bronchitis	Malaria and Diarrhoea
Long Mountain ...	17	975	65	9	56	99	Malaria, Dysentery, Pulmonary Tuberculosis, Ankylostomiasis and Abscess	Pneumonia and Bronchitis
Poudre d'Or ...	10	2,050	56	19	68	209	Malarial fever, Bronchitis, Nephritis and Abscess	Nephritis, Influenza and Dysentery
Flacq ...	18	2,660	143	33	82	224	Malaria and Ankylostomiasis	Pneumonia and Ankylostomiasis
Mahebourg ...	29	2,067	161	29	108	586	Influenza and Ankylostomiasis	Pneumonia and Broncho-Pneumonia
Souillac ...	50	2,575	138	31	76	421	Influenza	Influenza
Victoria ...	58	4,639	218	101	254	1,023	Ankylostomiasis	Pneumonia
Mental (Infirmary for Physical diseases)	5	420	22	9	56	145	Malaria, Epilepsy and Influenza	Epilepsy and Pneumonia
Beau Bassin Prison ...	5	475	8	10	32	71	Malaria, Abscess and Influenza	Pneumonia
Barkly Industrial School ...	...	76	...	...	12	3	Influenza	......
Moka ...	24	1,398	70	13	83	623	Tuberculosis, Anaemia and Abscess	Pneumonia and Abscess
Total ...	361	24,609	1,319	417	1,125	4,835		

VIII.—Prisons and Reformatories

44. There are two prisons in the Colony, one at Beau Bassin, the other in Port Louis. The Industrial School for juvenile delinquents is at Beau Bassin.

The health of the prisoners has been good, and no epidemics of disease occurred during the year.

The diet issued to prisoners is adequate and no deficiency diseases have been recorded.

IX.—Meteorology

45. The Director of the Observatory has kindly furnished the following table.

METEOROLOGICAL RETURN FOR THE YEAR 1929

From the records of the Royal Alfred Observatory 178 ft. above sea level.

	Temperature °C.					Humidity	Rainfall	Winds		Remarks
	Mean of Daily Minima on Grass	Mean of Daily shade Maxima	Mean of Daily shade Minima	Mean daily Range	Mean	Mean percentage	Amount in inches	Resultant Direction	Mean recorded speedm.p.s.	
January ...	20.8	28.7	22: 6	6.1	25.5	79.0	8.60	E. by N.	3.13	
February ...	20.7	29.0	22,9	6.1	25.7	79 6	4.50	E.	3.47	Highest hourly wind 15.4 m/s February 9th.
March ...	19.2	28.9	22.2	6.7	25.2	77.4	3.59	E.	2.74	
April ...	19.1	26.9	21.4	5.5	23,8	85.1	14.95	E.	2.92	Biggest April rainfall ever recorded.
May ...	15.9	25.3	19.2	6.1	22.0	80.8	8.02	E. S. E.	3.43	
June ...	13.0	23.8	17.2	6.6	20.3	78.4	2,54	E. S. E.	3.14	
July ...	12.4	23.1	16.6	6.5	19.6	77.4	2.22	E. S. E.	3.49	Lowest temperature 13.4 °C. July 10th.
August ...	13.0	23.3	16.8	6.5	19.7	77.4	2.17	E. by. S.	3.51	
September ...	14.6	24.3	17.4	6.9	20.5	72.3	1.00	E. S. E.	4.11	
October ...	14.7	26.5	18.3	8.2	22.1	93.2	0.87	E.	3,03	
November ...	17.3	28 6	19.9	8.7	24.0	69.7	0.47	E.	2,84	
December ...	20.6	29.2	22.4	6.8	25.2	81.3	22.04	E. N. E.	2.42	Biggest December rainfall ever recorded. Highest temp. 33.2° on 1st.
Year ...	16,8	26.5	19,7	6.8	22.8	77.6	70.97	E. by S.	3.19	

46. It is my pleasant duty to thank all members of the Department for their willing co-operation in the work recorded here.

22nd September, 1930.

J. BALFOUR KIRK,
Director.

APPENDIX I

ANNUAL REPORT OF THE BACTERIOLOGICAL LABORATORY FOR THE YEAR 1929

The total number of samples, articles and animals examined at the Bacteriological Laboratory in the year 1929 was 9,391 as compared with 11,841 in 1928. The reduction has been specially marked in the clinical division possibly in consequence of the financial stringency prevalent during the period under review.

The figures for the last ten years stand as follows :—

In 1920	...	1,311	examinations
1921	...	1,776	„
1922	..	1,850	„
1923	...	3,014	„
1924	...	4,012	„
1925	.	5,167	„
1926	...	5,077	„
1927	...	8,062	„
1928	..	11,841	„
1929	...	9,391	„

The arrangement into chapters adopted in previous annual reports is again adhered to on this occasion for the sake of convenience and facility of comparison.

CLINICAL WORK

This consisted in the examination of materials received for diagnostic purposes from the public hospitals and dispensaries as well as from general practitioners throughout the Colony. Work for private parties is done free if the patient is declared by his medical attendant to be unable to pay the laboratory charges ; a fee is otherwise claimed in accordance with a scale fixed by Regulation. The revenue derived from that source is shown in the last chapter of this Report.

A total of 5,635 samples were received for examination under this head against 9,526 in 1928. Out of this number 582 were culturally investigated and whenever required further tested by experimental inoculation. The materials examined comprised specimens of blood, sputum, pus, cerebro-spinal fluid, pathological exudates, fæces, urine, throat nasal and uterine swabs and neoplastic formations.

(1) *Blood.*

(a) Malaria.—268 smears were examined for malarial parasites with positive findings in 33. The three varieties of plasmodia were represented in the following proportions :—

P. falciparum	in	10	cases
P. vivax	„	18	„
P. malariae	„	5	„

(b) *Filariasis.*—Of 62 smears examined for filaria embryos, 15 showed microfilaria Bancrofti viz. 24.2%.

(c) *Typhoid and the Paratyphoid Fevers.*—This group of febrile diseases accounted for 533 samples against 388 in 1928 when the figure had exceeded by 80 that for 1927. Of the total number received 441 were tested for specific agglutinins with positive results for *Eberth's b. typhosus* in 183 cases. Agglutination tests for *b. paratyphosus A* and *B* showed one sample positive for para. A and none for para. B. Furthermore, neither of the paratyphoids was discovered in 48 blood cultures on bile-salt broth 9 of which yielded *b. typhosus* (Eberth).

(d) *Tropical typhus.*—Thirty-eight specimens of blood from cases of undefined pyrexia were tested for agglutinins against stock cultures of Proteus X 19 in the look out for tropical typhus in the Colony. The results were invariably negative.

(e) *Syphilis.*—1283 samples were submitted to the Bordet-Wassermann complement fixation test with positive results in 318 (24.7%) and weakly positive ones in 103 cases. The method applied was the same as described in previous reports, namely Hecht's modification of Wassermann's process, employed with an antigen prepared from ox-heart muscle freed of fat, minced and extracted with rectified spirit, the dry extract being subsequently treated with ether and acetone in accordance with the procedure recommended by Neymann. The antigen thus prepared is standardised by means of serum obtained from a genuine case of syphilis, its activity controlled at frequent intervals and compared with that of other antigens used concurrently. It is discarded on the first sign of weakening and invariably after the lapse of three months.

(f) *Tuberculosis.*—Besredka's complement fixation reaction proved positive in a case o suspected incipient tuberculosis.

(g) *Blood Counts.*—116 differential leucocyte counts were made. This procedure is apparently gaining favour among the local medical practitioners owing to the valuable information it is apt to furnish in obscure pyrexias.

(h) *Urea, Glucose and other values.*—328 samples of blood were examined for their urea value, and 42 for their glucose and chloride contents.

(i) *Bacteriological examination.*—Of 57 specimens of venous blood drawn with aseptic precautions and cultured on various media, 9 yielded *B. typhosus*, 6 staphylococci, 2 *streptococci* and 1 *B coli communior.*

(2) *Sputum.*—498 samples were microscopically examined principally for Koch's tubercle bacillus with or without the help of concentration methods. Tubercle bacilli were found in 89 or 17.8%. Cultures made from 16 samples for the preparation of composite vaccines led to the isolation of the microorganisms usually present in bronchial expectorations viz., *pneumococci*, staphylo and streptococci and *Micrococcus catarrhalis.*

(3) *Throat and Nasal Swabs.*—Received on 516 occasions as compared with 380 in 1928. Their examination was made either for purposes of diagnosis or for the detection of diphtheria carriers among contacts or convalescents with positive findings in 76 cases. Cultures on solidified ox-serum were made from 316 of these swabs which had proved doubtful or negative on preliminary microscopical examination with the result that the presence of the Klebs-Lœffler organism was demonstrated in 52 of these cases. Six of the swabs also showed Hoffmann's pseudo-diphtheria bacillus, four *Oidium albicans* while Vincent's bac. fusiformis was found on 13. On the other hand a swab of the nasal mucous membrane in a suspicious case of leprosy failed to reveal the presence of Hansen's bac lepræ.

(4) *Pus.*—Number of specimens 169, derived from divers sources: Boils, aural, urethral and vaginal discharges, cutaneous ulcerations, pleural collections, mastoid abscess etc, Their examination, both microscopical and cultural usually showed staphylococci or streptococci but pneumococci were present in pure culture in the pus from a pleural abscess, b. pyocyaneus in a case of ear disease, gonococci in 12 specimens of urethral and vaginal discharge, calcium oxalate crystals in the pus from a case of urethral calculus; and in 15 specimens from various locations the diphtheroid bacillus mentioned in previous reports as of not unfrequent occurrence in post influenzal suppurations.

(5) *Cerebrospinal Fluid.*—75 samples were received as compared with 106 in 1928. Twenty-one were only microscopically examined 4 of which showed pneumococci associated in one sample with staphylococci. With regard to the remaining samples ;

A leucocyte count was made with	12
A differential leucocyte count with	2
A Wassermann complement fixation reaction (7 positives) ...	19
The Globulin test	6
The Albumen value	7
The Glucose value	3

Finally 4 samples were cultured one of which yielded pneumococci and another staphylococci; the other two gave no bacterial growth.

(6) *Tappings* —

(a) From pleura: 8 samples 2 of which showed streptococci and one pneumococci.
(b) From knee-joint: One sample, sterile.
(c) From abdominal cavity: One sample, leucocytes and red blood cells, no bacteria.
(d) From joint (not specified): One sample, sterile.

(7) *Uterine Swabs.*—17 were examined from cases of puerperal sepsis; 8 showed pyogenic organisms and one the diphtheroid bacillus already referred to,

(8) *Ulcer Scrapings* ;—

(a) From penis: 3 cases; no *treponema pallidum,*
(b) From gums; 4 cases; Vincent's fusiform bacillus, strepto—and staphylococci, spirochætes.
(c) From finger nail; One case; no fungus growth.
(d) From finger and toe: 2 cases; pyogenic organisms.

(9) *Faeces.*—Total number of samples 943. *Amoebae* present in 122: *Ent. histolytica* 58, *Ent. nana* 1, *A. coli* 63. The stools examined contained a variety of other endoparasites either in the adult or egg stage:—

Trichuris trichiura	696	specimens.
Blastocystis	275	,,
Ascaris	262	,,
Hookworm	253	,,
Giardia intestinalis	63	,,
Strongyloides	27	,,
Chilomastix mesnili	21	,,
Clonorchis sinensis	15	,,
Trichomonas	14	,,
Oxyuris vermicularis	3	,,

Eggs of *Clonorchis sinensis* were found in the stools of fifteen persons, all chinese, apparently in good health, in the course of an investigation undertaken by the laboratory to determine the presence and distribution of that parasite in the Colony pursuant to a suggestion from Sir Andrew Balfour. The subject is dealt with in greater detail in Chapter V of this Report.

Two specimens were also chemically analysed and in a case of enteritis of obscure origin, *tubercle bacilli* were found in the stools.

Twelve samples were cultured on bile-salt broth. One yielded *B. typhosus* and another *B. pseudo-asiaticus*.

(10) *Urine.*—585 analyses against 694 in 1928. They consisted in the main in routine clinical procedures both chemical and microscopical but in 87 cases the *centrifuged sediments* of samples collected aseptically were cultured with the following results :—

B. coli communis (Escherich)	was isolated	from	25	samples
,, *communior*	,,	,,	12	,,
Staphylococci	,,	,,	8	,,
B. asiaticus	,,	,,	4	,,
B. typhosus	,,	,,	2	,,
B. pyocyaneus	,,	,,	2	,,
B. diphtheroideus	,,	,,	2	,,

While b. *lactis aerogenes*, b. *paratyphosus* A, b. *paratyphosus* C, b. *aertrycke*, b. *alkaligenes* and a *streptococcus* were recovered from one sample each respectively.

Microscopical examination of the sediments also showed :

Eggs of *Schistosomum haematobium*	34	specimens
Microfilariae	3	,,
Trichomonas	2	,,
Gonococci	1	,,
B. diphtheroideus...	1	,,
Hyaline casts	27	,,
Granular casts	19	,,
Cellular casts	5	,,
Spermatozoa	1	,,

(11) *Intestinal Worms.*—were received for identification on 3 occasions. They turned out to be specimens of *Oxyuris vermicularis*, *Ascaris lumbricoides* and *Necator americanus*.

(12) *Organs, Tissues and Pathological formations.*—Sections were cut of 76 specimens. True neoplastic growths were met with in 26 cases. They consisted of :

Squamous epithelioma	7	cases
Sarcoma	6	,,
Adenocarcinoma	4	,,
Scirrhus cancer	4	,,
Lipoma	2	,,
Fibryomyoma	1	,,
Fibroma	1	,,
Chondroma	1	,,

In three of the epitheliomata eggs of Schistosomum haematobium were found, more or less shrivelled up and distorted. The sections were perfectly characteristic of epitheliomata of the Malpighian type but the presence and situation of the eggs were suggestive of a causal relationship as a result of prolonged irritation.

Uterine curettings were examined on several occasions for the early detection of cancer and in spite of the difficulties inherent in such investigations valuable information was obtained by that means, the findings as to malignancy being confirmed by subsequent examination after operation.

II.—VACCINES

A. Prophylactic Vaccines.—Antityphoid preventive vaccine (Wright-Leishman) and Calmette's B. C. G. vaccine against infantile tuberculosis were as before regularly prepared and issued free of charge on demand.

613 applications for anti-typhoid vaccine were satisfied as compared with 285 in 1928. In reply to the question why T.A.B. is not now obtainable from this laboratory it may be stated that the compound vaccine was prepared for several years after Sir Andrew Balfour's visit but that its preparation was discontinued because the demand for it very rapidly came to an end. The reason for this abstention seems to lie in the more vivid reaction which usually follows an injection of T.A.B. and in the feeling prevalent among medical practitioners that the extended protection is not called for in view of the apparent rarity of paratyphoid affections in the Colony.

1976 infants were vaccinated against tuberculosis with B.C.G. during the year and 708 doses of the vaccine were issued to stockbreeders at the request of the Agricultural Department for inoculation to young bovines.

B. *Therapeutic Vaccines* —103 auto-vaccines were prepared in 1929 as compared with 168 in 1928. The micro-organisms employed were derived from materials collected with aseptic precautions and subcultured on agar slants after isolation. The vaccines were in the majority of cases obtained by the now classical method of suspension in sterile salt solution of organisms killed by heat. Standardisation is by counting with a Thoma-Zeiss hæmocytometer and 0.4% lysol is added to ensure preservation. Filtered vaccines (Besredka's anti-virus) and mixed vaccines for oral administration (Fisch) were also prepared.

The following micro-organisms entered in the preparation of the vaccines either separately or in various combinations :

From blood : *b.* typhosus, strepto and staphylococci ; 11 vaccines.

From urine : *b.* typhosus, *b.* pyocyaneus, *b.* asiaticus, *b.* lactis ærogenes, *b.* ærtrycke, *b.* coli communior and communis, *b.* paratyphoid A and C (one vaccine each), staphylococci ; 36 vaccines.

From pus : streptococci, staphylococci, gonococci, *b.* diphtheroideus ; 38 vaccines.

From sputum : pneumococci, strepto—and staphylococci, mic. catarrhalis ; 10 vaccines.

From throat and nasal swabs : streptococci, *b.* diphtheroideus ; 3 vaccines.

From ulcer exudations : staphylo—and streptococci ; 2 vaccines.

From fæces : b. icteroides, streptococci, *b.* pseudo-asiaticus : 2 vaccines.

From cerebro-spinal fluid : pneumococci ; 1 vaccine.

Filtered vaccines from stock cultures of staphylococci (16 strains) and streptococci (45 strains to be used in the form of local applications were always kept in readiness and met with a fair demand.

III.—PUBLIC HEALTH

A total of 729 samples of foods and drugs were analysed in the Chemistry Division of the Laboratory during the period covered by this Report. The substances examined comprised :

	No. of samples	No. of cases	From whom received
Milk...	689	689	Sanitary authorities, District Courts
Wine	5	2	Sanitary authorities, Revenue Dept.
Porter	2	1	Revenue Department
Flour	2	2	Sanitary Authorities
Whisky	2	1	Police
Bran	1	1	M. O. H. Port Louis
Wax...	1	1	”
Lime juice	1	1	”
Groundnut oil	1	1	Prisons

In addition to the above, 2 samples of water were submitted to a chemical analysis and 17 were examined for their bacterial contents. Twelve of these were from the Mare-aux-Vacoas supply for the monthly control of the filter plant at La Marie. The other examinations referred to a number of public and private supplies regarding which information was wanted by the Public Works Department.

The weekly control of the milk delivered to Public Institutions which originated in 1928 was kept up throughout the year 1929.

Two samples of milk were examined bacteriologically at the request of the Sanitary Authority for Port Louis for the presence of typhoid bacilli and specimens of oysters and ice-cream also from Port-Louis were tested with the same object in view. From the oysters b. coli and b. cloacæ were isolated and from the ice-cream b. coli and b pseudo-asiaticus but the specific causal organism of enteric fever was not met with in the course of these investigations.

The contents of a septic tank were examined both chemically and bacteriologically on two occasions at the demand of the Curepipe Board of Commissioners to check the action of a special sterilising fluid under experimentation.

IV.—MEDICO-LEGAL

The articles of evidence, organs, substances, etc., referred for examination by the Judicial Authorities at the request of the Police and other Government Departments amounted to 307, showing a falling off as compared with the number for the preceding year but being still in excess of that for 1927. The figures for the last five years were as follows:

1925...	240 articles
1926...	272 ,,
1927...	283 ,,
1928...	330 ,,
1929...	307 ,,

These examinations were called for in connection with the following offences:

Unlawful distillation	78	samples in	37	cases
Rape	76	,,	13	,,
Poisoning	34	,,	10	,,
Possession of Gandia	20	,,	8	,,
Sodomy	18	,,	4	,,
Arson	9	,,	2	,,
Unlawful administration of drugs	3	,,	1	,,
Sudden death from cause unknown	2	,,	1	,,
Possession of Opium	2	,,	2	,,
Ether	2	,,	1	,,
Hair dye	1	,,	1	,,
Murder	62	,,	8	,,

Fraudulent distillation of spirits which occupied the second place on the list in 1928 came to the top in 1929 with 78 samples. This seems to be due, partly at any rate, to the rule adopted by the prosecuting Authorities of first obtaining a report from the Government Analyst before commencing judicial proceedings. The other investigations mentioned in this chapter presented no particulars of special interest.

V.—RESEARCH

1. *Clonorchiasis.*—The discovery of eggs of Clonorchis Sinensis in a specimen of stools from the Chinese Hospital Port Louis in 1928, led to an investigation, specially entrusted to Mr. L. Webb Ag. Scientific Assistant, into the incidence of this disease among the chinese population of the Colony. Microscopical examination of the stools of 31 members of that community revealed the presence of the characteristic eggs in 61.3% a percentage which, if open to error, must fall short of the truth as only one sample could be obtained in each individual case. Some of the patients, who showed well formed ova in their stools, stated that they had been residents in Mauritius for as many aa 23, 31 and 32 years without a break, so that if the information be correct one is driven to the conclusion that either the disease was acquired in the Island or this particular trematode is endowed with remarkable longevity in its human host. In this connection it is to be remembered that the taste for the raw flesh both of fresh and sea-water fishes as a food is prevalent among chinamen in Mauritius whether born in the Colony or not. The stools of six chinese, five of whom were children, native of this island, were examined for eggs of C. sinensis with negative results.

Experiment No. 1.—Attempts to breed the worm from the eggs failed. Faeces containing large numbers of eggs were mixed with (a) distilled water of slightly acid reaction and (b) with tap water alkaline in reaction and examined daily for a period of three months. By the end of that time all ova had broken down without the formation of free swimming miracidia. A curious fact was, however, observed viz , the partial protrusion of the embryo through the egg shell after a few days (five) in distilled water. The same process also took place in tap water but here it was delayed until about the sixth week. The embryo thus partly extruded was absolutely non-motile. It has in fact already been noted by other observers (Nagano, Bull. Trop. Dis. Vol. 24 No. 3 page 171; Faust and Khaw, Bull. Trop. Dis. Vol. 24 No. 12 page 983; Clayton Lane and George C. Low, The practice of Medicine in The Tropics, Byam and Archibald, page 1795,) that the miracidium of C. Sinensis is not liberated in water but that the ova must first be ingested by the snail host, hatching of the miracidium taking place in the gut of the snail.

Experiment No. 2—Stools showing numerous eggs of C. Sinensis mixed with tap water were placed in glass jars containing the following four species of snails three of which are known to harbour cercaria in nature: Melania tuberculata, M. spinulosa, Paludina vivipara and Limnea mauritiana. Batches of these snails were taken out every week for ten consecutive weeks and dissected. No cercariae were found in any of them.

Experiment No. 3.—Six species of cercariae having been found in fresh water snails collected from the rivers of Mauritius, living snails of the species known to be capable of infestation and lacerated snail livers full of cercariæ were placed in glass jars with water containing two kinds of edible fresh water fishes viz., Cyprinus Auratus (gold fish and Girardinus pœcilloides (top minnows). After the lapse of from four to eight weeks the fishes were dissected out and examined for the metacercariæ of C. Sinensis. The results were invariably negative.

The fate of the cercariæ after being swallowed by the top minnows has been studied in some detail. One hour after ingestion they are found to be actively moving in the digestive tract of the fish but later the cercaria drops its tail, its movements become sluggish, vacuoles appear in the cytoplasm, the œsophagus and all granules gradually disappear and by the end of 24 hours no trace of cercariæ or cysts can be found either in the alimentary tract or in any other part of the body of the fish.

Much patience and industry was shown by Mr. Webb in the course of this study which will be continued whenever fresh materials can be obtained.

2 *Bilharziasis.*—The study of the life history of Schistosomum hæmatobium, outside its human host, received a good deal of attention at this Laboratory during the year 1929, especially on the part of Student L. Cantin who devoted much time to this particular line of research. 1,763 fresh water snails captured from suspected waters were dissected and examined for the presence of cercariae of the bilharzial type, again to no avail, and the question arises whether the cercaria of S. hæmatobium possesses the same characteristics in this part of the World as have been described in Egypt and elsewhere. As stated in previous reports six different species of cercariae have been found in the fresh water snails of the Island and they have been numbered I to VI respectively pending definite identification. In the endeavour to determine whether any of them is capable of developing into adult S. haematobium, attempts were made in 1928 to infect young monkeys (macamus cynomolgus) with cercariae Nos. I, II and IV. These attempts having failed, fresh experiments were carried out in 1929 with the other 3 species viz , cercariae Nos. III, V and VI but as before the animals remained absolutely free from any trace of infestation.

The reverse process of keeping snails, from parts of the island where the disease is not known to exist, in water mixed with freshly passed urine containing schistosomum ova, was also tried with equally negative results. This involved the dissection of 875 snails.

Of the total number of 1,763 snails dissected independently of the above experiment, 123 were found to harbour cercariae or rediae as shown in the following table. The snails belonged to four different species were found infested and this to a very different extent, Melania tubercula with 102 infestations or 9% and Limnea Mauritiana with 21 infestations or 5 o/o.

Kind of snails	No. of snails dissected	No. of snails infested	Type of Cercariae					
			I	II	III	IV	V	VI
Limmea Mauritiana	420	21	19	...	...	...	2	...
Melania Tuberculata	1,033	102	...	48	43	11	...	...
Melania Acanthica	60	...	...	...	...	...	...	...
Paludina Vivipara	250	...	...	...	...	...	...	...
Total... ...	1,763	123	19	48	43	11	2	...

3. *Lactose Fermenters in Human Faeces.*—The biological characteristics of the lactose fermenters isolated from human fæces in 1928 were made the subjects of further study. The investigation was conducted on the lines adopted by Mc. Conkey, Clemesha and Archibald. The results are shown in the following tables drawn up with much patience and diligence by Ag. Scientific Assistant L. Webb and Ag. Microscopist Dorval who were specially entrusted with this work. With reference to these findings it may be mentioned that of the 7 species of micro-organisms that were more commonly met with, b. vesiculosus and b· cavicida have not been found by us at any time in the course of water examinations. It is also to be noted that only 2 of the 20 unclassified species were encountered with any degree of frequency viz : Nos. 1 and 18 which were present in 8% of the samples. The others do not appear therefore to be ordinary inhabitants of the human intestine but the isolation of Nos. 1 and 18 from quantities less than 100 cubic centimeters of water used or intended to be used for consumption ought to arouse suspicion.

Mc. Conkey in England, Clemesha in India and Archibald in Khartoum classified all lactose fermenters which they isolated from human fæces in the following four groups :—

Group I ferment neither Saccharose nor Dulcit.
Group II ferment Dulcit but not Saccharose.
Group III ferment Dulcit and Saccharose.
Group IV ferment Saccharose but not Dulcit.

The grouping of the thirty-four different species of micro-organisms isolated from human fæces in Mauritius and their order of frequency is shewn in the following tables :

TABLE I.—150 samples.

No.	Genus	Bacillus	%	Group	No. of samples
1	Escherichia	Unclassified	8.00	III	12
2	,,	B. coli communior	10.00	III	15
3	,,	B. coli communis	6.66	II	10
4	,,	B. para-entericus	0.66	III	1
5	,,	Unclassified	3.33	II	5
6	,,	B. Grunthal	3.33	I	5
7	,,	B. pseudo-dysenteriæ	2.00	I	3
8	,,	B. pseudo-coloides	2.66	IV	4
9	,,	Unclassified	5.33	II	8
10	,,	,,	2.00	III	3
11	,,	,,	1.33	III	2
12	,,	B. vesiculosus	12.00	I	18
13	,,	Unclassified	2.00	IV	3
14	,,	B. acidi lactici	1.33	III	2
15	,,	B. colotropicalis	0.66	I	1
16	,,	B. Khartoumensis	1.33	II	2
17	,,	Unclassified	1.33	II	2
18	,,	,,	8.00	IV	12
19	,,	,,	0.66	II	1
20	,,	B. coscoroba	0.66	IV	1
21	,,	Unclassified	1.33	IV	2
22	,,	,,	1.33	III	2
23	,,	,,	0.66	IV	1
24	,,	,,	0.66	IV	1
25	,,	B. cavicida	6.66	II	10
26	Aerobacter	B. lactis ærogenes	6.66	IV	10
27	,,	Unclassified	0.66	IV	1
28	,,	B. cloacæ	2.00	IV	3
29	,,	Unclassified	2.66	III	4
30	,,	,,	0.66	III	1
31	,,	,,	0.66	III	2
32	,,	,,	1.33	III	2
33	,,	,,	0.66	I	1
34	,,	,,	0.66	III	1

The above table shows that out of 34 different species of micro-organisms
5 or 14.7% belong to Group I,
7 or 20.6 ,, ,, Group II,
12 or 35.3 ,, ,, Group III,
10 or 29.4 ,, ,, Group IV.

and that the relative frequency of each group is ;—

Group	No. of Colonies	% of 150 Colonies
I	28	18.6
II	38	25.3
III	46	30.6
IV	38	25.3

The percentages obtained by the above-mentioned authors are given for comparison :—

		Mc. Conkey 241 colonies	Clemesha 1207 colonies	Archibald 10 colonies	Local 150 colonies
Group I	...	34	53.2	20	18.6
Group II	...	38	17.4	30	25.3
Group III	...	15	6.8	40	30.6
Group IV	...	12	22.2	10	25 3

From table I we see that b. vesiculosus is the predominating organism as it occurs in 12% of all cases.

Second in frequency is b. coli communior, occurring in 10% of cases.

Third in frequency are Nos. 1 and 18 each occurring in 8% of cases.

Fourth in frequency are b. coli communis, cavicida and lactis aerogenes, each occurring in 6.66% of cases.

TABLE II

Showing the result obtained by the study of several colonies of lactose fermenters whether or not similar in aspect, taken close together, from nine samples of faeces.

Samples	I	II	III	IV	V	VI	VII	VIII	IX	Average
	%	%	%	%	%	%	%	%	%	%
Group I ...	0	0	0	20	12.5	0	40	0	80	16.7
Group II ...	0	0	0	20	12.5	0	0	100	0	14.7
Group III ...	50	33.3	25	40	50.0	0	60	0	20	30.9
Group IV ...	50	66.6	75	20	25.0	100	0	0	0	37.4

4. *B.C.G. Vaccination.*—The investigation commenced in 1925 was continued on the same lines in the year under review. Between September 1925 and December 31st. 1929, a total of 6,383 infants were submitted to this process of vaccination. The following are some figures collected in the course of this study.

Total number of children born in the Colony from April 1st 1928 to September 30th. 1929	21,591
Total deaths from all causes among infants of the same age period during the same 18 months...	2,844
Death rate from all causes...	13.12%
Of these 21,591 children definite information has been obtained regarding 1,660 having received B. C. G. vaccine. Total deaths from all causes among these	92
Death rate from all causes	5.54%

a figure which compares favourably with the total death rate above given specially if it is mentioned that the vaccinated children belong principally to the labouring classes.

Of the 92 vaccinated infants whose death was recorded, two died of tuberculosis. These two children lived with their mothers both tuberculous.

5. *Uterine Cancer.*—On the suggestion of a distinguished surgeon an enquiry was initiated to determine the extent of the malignant process in cases of cancer of the uterus having just reached the stage of clinical or microscopical diagnosis. The object was to endeavour and find out whether figures could be obtained capable of serving as a guide to the surgeon in deciding whether to perform a partial or total hysterectomy. Such an investigation naturally calls for a large number of cases and in a small population like ours must necessarily extend over a rather long period. When the year came to a close 7 specimens had been examined of the whole uterus after hysterectomy. Sections were cut systemetically of the body, isthmus and cervix of the organs. In all these cases the disease was of the adenocarcinomatous type. In four the entire uterus from fundus to cervix was infiltrated though to a variable extent but in the remaining three the disease was confined to either the fundus or isthmus, or both, but the cervix was free from any evidence of infiltration. This enquiry will be continued.

VI. ADMINISTRATION

Mr. R. Avice du Buisson, Laboratory Assistant, returned from a year's leave of absence spent in England, during which he devoted much of his time to perfecting his knowledge of advanced chemistry, and resumed the duties of his office in November 1929.

The services of Mr. L. Webb, Ag. Scientific Assistant, were placed, with the approval of the Governor, at the disposal of Professor Th. Mortensen, Director of the Zoological Museum, University of Copenhagen, from September 17th to October 31st 1929. Professor Mortensen who was engaged during his visit to the Colony in studying the marine fauna of the Island, was good enough to express in flattering terms his acknowledgment of the assistance he received from Mr. Webb on that occasion.

The fees collected at the Laboratory for work done for private parties amounted to Rs. 6,330.84 Cs. An additional sum of Rs. 148 was paid direct to the Treasury for laboratory dues bringing the total receipts for the year to Rs. 6,478.84 Cs., as against Rs. 10,649.95 Cs. in 1928.

L. G. BARBEAU,
Superintendent Bacteriological Laboratory.

May 17th, 1930.

APPENDIX II

REPORT ON THE HOOKWORM BRANCH FOR THE YEAR 1929

1.—ORGANIZATION AND STAFF

No change is to be recorded in the staff. In the course of the year it was decided to close the field office and to concentrate all the microscopical work at the Central Office in Curepipe. By so doing better control and greater efficiency have been obtained whilst expenditure has been reduced.

2.—EXTENT OF OPERATIONS

Three districts have been attended to in 1929:

Grand Port, Savanne and Plaines Wilhems.

Work in Grand Port, which had been started in 1928, was completed whilst activities were progressing in Savanne and the campaign in these two districts was closed on July 31st.

A preliminary survey of the population was started in Plaines Wilhems on August 1st and treatment in the field began on September 1st.

In Black River a hookworm survey of certain localities was made at the request of the Honourable Director of the Medical and Health Department.

At the Central Office separate records are kept of those persons who, although they have not been touched by direct propaganda, send in specimens for examination and call for treatment on the day of the week assigned for it. The number of such examinations made exceeded that of the previous year by 1,142 whilst 1,931 patients were treated as against 798 in 1928. It may be added that the persons referred to above include every class of the population and come from every district. Some of them have actually travelled thirty or forty miles in order to obtaintreatment.

Besides lectures and demonstrations (133 for the year) which were given in the schools and in the field, two conferences were made:

One at the Chamber of Agriculture,
One at Quatre Bornes Town Hall.

Full details of the work done will be found in the annexed statistical table.

3.—MICROSCOPIC EXAMINATION

The Willis flotation method has been persevered with throughout the year.

It may be noted that in the Southern districts two hookworm campaigns have been carried out at five years interval. The comparative corrected percentage of infection is:

	1924	1929
Grand Port	93.7	89.5
Savanne	96.4	88.7

showing a slight decrease in both districts Is the fall in the incidence of the disease to be regarded as a result of the first campaign or as a mere coincidence? Against the last hypothesis stands the fact that the fall has been noted in two districts and that in each district half of the total population submitted to examination on each occasion.

On the other hand, if it is hardly conceivable that the beneficial effects of the treatment on the natives should have lasted five years there is no reason to deny to soil sanitation a part in the results apparently achieved; all the more so, that the fall is greater in Savanne where both the upper and lower claeses seem to have made a more sustained effort in that line.

4.—TREATMENT

The drugs used are:

(i) oil of chenopodium,
(ii) Tetrachloride of Carbon,

with a maximum dose of 1.5 cc. and 2 cc, respectively.

As a routine measure, adults receive a first dose of Oil of Chenopodium and are subsequently treated with Carbon tetrachloride, Ascaris infection being extremely common and heavy, experience has proved that it was advisable to get rid of these parasites before administering Tetrachloride of Carbon.

5.—GENERAL REMARKS

The results obtained during the year are certainly most encouraging. Not only are the labouring classes becoming conscious of the benefit that can be derived from the campaign, but the upper classes are more alive to the dangers of hookworm disease and realize the necessity to co-operate in the fight against the scourge.

It may be noted that on several occasions additional treatments have been given on sugar estates and in public institutions at the special request of the managers.

The following comparative figures illustrate the progress made during the last three years:

	Census	Number of Examinations	Number of Treatments
1927	71,469	38,578	18,100
1928	62,436	32,890	32,705
1929	50,393	33,419	34,192

If something has been done, a great deal more remains to be done and it is hoped that it will soon be possible to intensify the campaign by increasing the number of units.

February 3rd, 1930.

A. L. D'ARIFAT,
Medical Officer in charge, Hookworm Branch.

HOOKWORM CAMPAIGN WORK—MAURITIUS—FOR THE YEAR 1929

	Census	0-5		6-10		11-20		21-30		31-40		41-50		51-60		Over 60		Total		
		Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	% Infection
Central Dispensary ...	5,730	1,172	396	847	488	955	644	771	500	599	351	358	231	159	108	55	33	4,916	2,751	55·9
Grand Port ...	356	29	5	15	4	17	5	19	7	25	8	8	2	6	3	...	...	119	34	28·5
Savanne	16,893	1,715	1,085	1,728	1,088	2,143	1,381	2,050	1,349	1,406	916	925	612	522	363	206	132	10,695	6,926	64·7
Plaines Wilhems ...	26,962	3,363	1,855	3,233	2,139	3,507	2,438	2,782	1,894	1,996	1,329	1,300	858	720	464	434	259	17,335	11,236	64·8
Black River ...	452	61	29	44	20	78	53	67	43	56	37	32	20	14	9	2	...	354	211	59·6
Total ...	50,393	6,340	3,370	5,867	3,739	6,700	4,521	5,689	3,793	4,082	2,641	2,623	1,723	1,421	947	697	424	33,419	21,158	63·3

	Classification by Race								Other Helminths					Treatments					Re-examination after Treatment									
	Mixed		Indian		Chinese		White												1		2		3		4		Total	
	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Ascaris	Tricho	Strongy	Oxyuris	Taenia	First	Second	Third	Fourth	Total	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Central Dispensary ...	1,417	568	2,829	2,047	23	7	647	129	2,152	1,564	17	75	11	1,065	537	241	88	1,931	3	1	2	5	30	62	12	8	47	76
Grand Port ...	65	13	50	21	...	...	4	...	37	33	...	...	...	3,365	1,587	95	2	5,049	...	...	...	...	...	...	...	...	...	...
Savane ...	2,212	1,323	8,399	5,559	78	43	6	1	2,441	974	12	4	...	14,670	3,711	64	2	18,447	...	...	...	...	...	...	...	...	...	...
Plaines Wilhems ...	4,006	2,043	12,823	9,115	142	30	364	48	8,102	1,929	49	90	15	7,152	1,467	125	21	8,765	...	...	...	...	...	...	...	...	...	...
Black River ...	54	35	300	176	...	...	...	...	58	10	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	7,754	3,982	24,401	16,918	243	80	1,021	178	12,790	4,510	79	173	26	26,252	7,302	525	113	34,192	3	1	2	5	30	62	12	8	47	76

APPENDIX III

PORT LOUIS ANNUAL REPORT FOR 1929

I arrived in the Colony on the 11th February 1929, and took over the duties of Medical Officer of Health, Port Louis, from Dr. Pilot, who had been acting in that capacity.

In April, my sphere of action was extended, and I had thenceforth to exert some measure of sanitary supervision over the whole of the Island, but more particularly the Northern Districts, the post of Sanitary Warden North having been abolished.

On the other hand, as regards Port Louis, I had the assistance of Dr. Pilot, who was appointed Assistant Medical Officer of Health and Port Health Officer.

1.—Administration

The Sanitary Staff underwent a further reduction of two Sanitary Guards early in the year, owing to the non replacement of one who died, and of another who retired on pension.

The existing personnel is composed therefore of one Chief Inspector, four Inspectors, and five Guards.

2.—Public Health

Two epidemics occurred during the year; the first from Influenza in March, followed by another from Typhoid between July and September.

The number of fatal cases of *Influenza* was 53, but the number of deaths indirectly due to this cause was probably much higher. The actual incidence of cases was not known because the disease was not notifiable, but it is certain the extent of the epidemic reached serious dimensions thereby resulting in much disorganisation of business, and public services.

A communication was published in the newspapers detailing the precautionary measures advised in order to avoid and combat the disease, a spot map kept, showing the situations of the fatal cases, and in cooperation with the Poor Law Department, an intensive campaign undertaken to distribute food and medicine to impoverished families whereof many including the breadwinner were ill. The concentrated efforts of the Sanitary Staff, thus, in my opinion, undoubtedly saved many lives which would otherwise have been sacrificed, by assisting those poor people stricken down by illness to tide over the few most critical days.

A helpful index of the extent of the epidemic was also obtained by periodical examinations of the school registers for the purpose of tracing absentees, and thus many cases were discovered which would probably not otherwise have received medical attention.

The epidemic of *Typhoid* resulted in a notification of 71 cases. There were 20 deaths from this cause, giving a case mortality 28.2.

As would be expected in a town like Port Louis composed of mixed populations of generally unhygienic habits,—especially as regards feeding and the other calls of nature,—it was not possible to trace the epidemic to any special source. Samples of the town water supplies were analysed with a negative result. Similarly, attempts to isolate B. Typhosus from samples of milk, oysters, etc, proved unsuccessful. One was therefore forced to the conclusion that the seasonal climatic conditions were favourable to the dissemination of the causative bacilli emanating from carriers, of whom there must be always a considerable number in the town. As in the case of the Influenza epidemic, a communication was again sent to the newspapers, and in addition, pamphlets containing information about the disease were posted up in public places, police stations, markets, schools, etc., and free inoculation offered to all those willing to undergo it. The spot map showed that the epidemic was not limited to any special part of the town, and the disease disappeared gradually as it had commenced. Stocks of Widal tubes were always kept available at the Head Office for the use of Medical practitioners when required.

INSECT BORNE DISEASES

MALARIA

The number of deaths reported as due to Malaria and Malarial cachexia was 153, as compared with 167 the previous year. These figures must be accepted with reserve, for there are many reasons to doubt their being a reliable guide to the true condition of affairs.

INFECTIOUS DISEASES.

The number of cases of notifiable infectious and contagious diseases which occurred during the year 1929 is as follows:—

Disease		No. of deaths	No. of cases notified.
Typhoid Fever	...	29	78
Diphtheria	...	4	21
Erysipelas	...	6	10
Puerperal Sepsis	...	11	13
Tuberculosis	...	168	97

THE PUERPERAL STATE, PUERPERAL SEPTICAEMIA AND FEVER

25 deaths were registered as being due to the puerperal state and classified as follows : —

Disease	General Population	Indian Population
Puerperal Hæmorrhage	1	1
Other accidents of childbirth	...	1
Puerperal Sepsis	4	7
„ Albuminuria	...	4
„ Convulsions	1	2
Hyperemesis gravidarum	...	1
Abortion	...	3
Total	6	19

VITAL STATISTICS.

The estimated population of Port Louis, the area of which covers 16 square miles, was 54,147 on 31st December 1929, as against 54,464 on 31st December 1928.

The birth rate was 35.6 for 1929, and 38.4 for 1928.

The death rate was 35 for 1929, and 32.1 for 1928.

The fall in population must be attributed to emigration from the town.

INFANTILE MORTALITY.

MALES.

	0 to 1 year	1–2	2–3	3–4	4–5	Total
General Population	95	40	24	11	14	184
Indian Population	70	20	10	15	15	130
Total	165	60	34	26	29	314

FEMALES.

	0 to 1 year	1–2	2–3	3–4	4–5	Total
General Population	61	34	26	18	8	147
Indian Population	47	14	12	10	9	92
Total	108	48	38	28	17	239

Grand Total = 553

III.—Hygiene and Sanitation.

PREVENTIVE MEASURES.

EPIDEMIC DISEASES.—PLAGUE.

There has been no recurrence of Plague either human or rodent detected since 1927. The routine anti-plague measures however continue as heretofore, and there has been a notable increase in the number of old and new constructions rendered ratproof during the year as compared with the previous twelve months, the number of rooms being 456 as against 337. This work is being carried out centrifugally by the block system, save in exceptional circumstances, and in this way less opposition is encountered than if they were dealt with haphazard. All those dwellings wherein plague cases are known to have occurred in the past have now been made ratproof, and no new building is allowed to be erected which does not comply with the anti-rat specifications, a copy of which is supplied to every intending builder.

All ratproofing work done is inspected by the Medical Officer of Health before it is passed.

Claytonisation is performed periodically in grain and gunny bag stores, in which situations, and in the neighbourhood of restaurants, the ratcatchers concentrate their efforts.

42,490 rates were trapped, 27,691 of which were examined microscopically and found free from plague. 617 gravid females were caught having a total of 2,498 young.

The fecundity index was 4.05 as against 4.36 in 1928 and 5.93 in 1927. This suggests the possibility of the ratproofing having decreased the facility of access to food supplies, and in other ways increased the struggle for existence. 1573 rats were chloroformed and 3927 fleas removed from them. In October the "Rodier" method was commenced, by which system only the females are destroyed, and the males liberated after being deprived of a portion of their tails to provide information later as regards emigration. From October to December 2590 males were thus set free.

MALARIA

The suppression of mosquito breeding places in the town and outskirts continues to constitute a considerable part of the duties of the Sanitary Staff. Apart from the water courses which are under the care of a Moustiquer and Cantonniers, leaking "prises", defective roof and road gutters, and collections of water in neglected hydrants, barrels, tins etc, were often a source of trouble, and emphasised the necessity for frequent visits by the Inspectors and Guards. Householders guilty of culpable negligence in this respect were on occasions prosecuted. 186,331 feet of existing drains and water courses were upkept by the gang of cantonniers The gang of labourers employed in the Pouce and La Paix Valleys for the destruction of cactus was dismissed at the end of the financial year, and no further expropriations were effected in this part of the half mile belt. The results of the infection of large clumps of Opunthia Monocantha in this region by the Dactylopius tomentosus parasite have proved gratifying, and the experiment is being continued.

GENERAL MEASURE OF SANITATION

Night Soil and Conservancy

The drainage branch of the Public Works Department during the year constructed 170 more water closets which were connected to the sewer, this leading to an abolition of 223 pails.

Total number of pail latrines on 1. 1.29 = 2582
" " " " " " 31.12.29 = 2312
" " " pit " " 1. 1.29 = 673
" " " " " " 31.12.29 = 674

The oiling of the pits to prevent nuisance from flies etc. was done by the tenants under sanitary control.

The Paul and Virginie Street Septic Tank in the Eastern part of the town was out of use until October, in order to allow of its conversion into a tipping chamber connected with the sewer. This now receives approximately 1/3 of the total tippings, the one at Casis in the Western Area taking the remainder.

The service is carried out as before by a contractor who supplies motor transport and buckets, the working of which comes under the supervision of the Sanitary Department, which employs the necessary staff with the exception of the drivers. Save for occasional breakdowns of the motor transport, resulting in a delayed completion of the service, it may be said that on the whole the collection of the night soil was carried out satisfactorily.

It may be not out of place to draw attention here to the fact, that a considerable portion of the time of the Sanitary staff is given to the work of tracing night-soil fee debtors when property has changed hands, and of notifying the Receiver General of the monthly alterations in the register.

In a report on this subject near the close of the year I made alternative suggestions, and maintained that most of the work of this nature ought more properly to be entrusted to the revenue Branch.

COLLECTION AND DISPOSAL OF REFUSE

The Sanitary Department is responsible for the collection and disposal of the town refuse, and utilises for this work 7 Ford lorries and 20 trailers, this being a reduction of one lorry, which was scrapped, on last year's number.

Household, trade, and garden refuse, was removed free of charge and used to fill hollows in the Eastern and Western Suburbs. The total tonnage of the refuse removed was 9,000 tons, and the extent of the land reclaimed during the year was 65,000 square feet at Roche Bois, and 232,000 square feet at Cassis. The latter dump was discontinued in September, and an old quarry at Menagerie St., Cassis, came into use for that purpose.

The motor transport being several years old, the cost of upkeep proves high, but the exercising of a stricter control during the year has minimised leakage as regards spare parts, tyres, petrol etc., with most satisfactory results.

WATER SUPPLY

Progress is being made as regards the two new filter beds in course of construction at Pailles, which it is anticipated will be completed during next year.

Bacteriological examinations of the main Port Louis water supplies are carried out each month as a routine measure by the Director of the Government Laboratory at Réduit.

It can hardly be affirmed that the results of the bacterial counts thus obtained reveal a satisfactory state of purity, but it is expected that a definite improvement will be noticeable when the new filters are finished, and the chlorination plant working.

On the 29th December, the Grand River North West water supply to the town ceased, owing to the main being smashed up and blocked by debris at the intake as a result of unprecedented floods. A full account of the disastrous consequences will appear in the next year's Annual Report.

The watering of the streets, is performed by the Sanitary Department, and the town water supply is utilised for this purpose.

Owing to the Estimates for this service having been decreased from Rs. 8,000 to Rs. 5,000, it was found necessary to reduce the number of water carts from 5 to 3, with the sale also of 2 mules.

It will be a notable progress, when motor transport supersedes animal drawn vehicles for the watering of the streets.

HOUSING

During the course of the year I compiled two reports dealing with the Port Louis housing problem in its various aspects, and stated therein my recommendations. These came under the notice of His Excellency the Governor, who gave serious consideration to the subject. The improvements obtained are definitely encouraging, but much still remains to be done. A vigorous on-slaught against back-to-back houses has been initiated, and no rooms of this type have been erected in the town since my arrival. Marked improvement in this respect was brought about in 8 cases with a total of 24 rooms, and re-conditioning of houses was obtained in 51 instances with a total of 231 rooms. 39 new buildings were erected comprising 105 rooms, and all of these compare very favourably with those constructed before the intervention on the part of the Sanitary Authority was possible.

In addition to the structural ameliorations effected for the provision of better lighting and ventilation of dark undersized rooms, the Sanitary Staff are impressed with the necessity for propaganda, in order to combat the superstitious fear of fresh air and sunlight with which the poor and ignorant classes are apparently imbued.

MATERNITY AND CHILD WELFARE

The " Oeuvre Pasteur de la Goutte de Lait " continues to carry out splendid work at its milk distribution centre, which is supported by the Municipality with the help also of a contribution of Rs. 4,800 from Government. It is still in its early stages but is making praiseworthy progress. I think personally, that it is a pity sterilisation is practised in preference to pasteurisation, for it appears unlikely to me that the people benefitting from this excellent organisation will realise the necessity for giving some additional aliment to replace any thermolabile vitamines destroyed.

TRAINING OF SANITARY STAFF

Fortnightly lectures have been delivered and occasional test papers set during the year, by the Assistant Medical Officer of Health and the Chief Sanitary Inspector, who both deserve credit for their zeal in face of the poor response on the part of the Sanitary Staff.

The unsatisfactory attendance, must be attributed to the discouragement accruing from the disappointing results of the examination held the previous year.

CEMETERIES

There are three cemeteries within the district of Port Louis; two public ones under the control of the Municipality, and a private (Chinese) cemetery controlled by the Sanitary Department.

Representations to the Mayor have resulted in the construction of a mortuary at the Western Cemetery.

TOBACCO FACTORIES

There are seven of these in the town, and a personal inspection of them all impressed me on the whole unfavourably regarding the sanitary condition of the premises, and especially the state of overcrowding and poor ventilation in those factories where cigarette makers were employed.

I accordingly drew up draft regulations for their better sanitary control; but these have been left in abeyance in view of the fact that I was eventually able to report improvements, and to deal with existing nuisances, without the help of additional legislation.

MARKETS

The fish section of the Central Market as well as the stalls for the sale of vegetables, have undergone improvement. It is to be regretted however, that the Municipal Authority has not yet seen its way, towards obtaining a more judicious grouping of the different articles and trades. The milk stalls for instance should not be in proximity to the W. Cs., which ought never to have been constructed within the market enclosure, nor should monkeys continue to be exposed for sale in the foodstuffs section. The self-closing fly proof doors of the meat and fish departments are excellent in theory, but in practice they are usually seen wedged open for the convenience of the public.

Marked structural improvements can now be reported at the Plaine Verte Market. La Butte Market, though relatively small, is a model of its kind, but is apparently not appreciated as it should be, by the Western inhabitants for whos benefit it was erected.

SLAUGHTER HOUSE

The improvements being carried out at the Roche Bois Abattoir, are nearly completed, and mark an advance from a sanitary as well as a humane point of view.

Animals, in future, will be slaughtered in separate stalls not in sight of each other.

The bad condition of the meat wagons was brought to the attention of the Mayor, who had them repaired, and who also stated that the provision of new ones from abroad was under consideration.

DOGS AND PIGS

During the year, 1,100 stray dogs were caught by the Police wandering in the streets of the town. Of this number 593 were painlessly destroyed, 271 returned to their owners, 30 sold, 17 died in pound and 189 were disposed of in other ways.

In the extra urban area, 39 stray pigs were shot in accordance with Ordinance No. 20 of 1918.

SANITARY CONTROL AND FOODSTUFFS

In addition to the existing aerated water factories, a new one for the manufacture of cider was erected and commenced work, under the sanitary supervision of this Department.

The following table shows the foodstuffs seized by the Sanitary Department as being unfit for human consumption :—

33 bags of flour
600 tins of sardines in oil
60 ,, of butter
67 ,, of cheese
10 ,, of herrings
186 ,, of Anchovy paste
6 ,, of Margarine
21 ,, of peas
One ham
Two boxes of dates
551 sausages.

MILK TRADE

There being no cowsheds nor milk shops in the town, the milk is hawked in small quantities by a host of vendors working on their own account, or else employed with several others by middlemen. The latter purchase it from poor Indian cowkeepers outside the town, and thus in the great majority of cases, a sample of milk when sold is a mixture of that obtained from various localities.

This fact not only makes it very difficult to trace a suspected milk infection to its source, but also enhances in many instances the obstacles with which the Sanitary Authority has to contend, in endeavouring to discover the real transgressor in cases of sophistication of the milk.

During the month of June, an intensive assault was launched by the Sanitary Staff against the milk vendors, with the hope of materially reducing the extent to which the milk was being adulterated, and in order to obtain improvements in other respects. Samples were procured in greater numbers by all the Inspectors at unexpected times and in unusual situations, and it became not uncommon for the dishonest milkseller to be seen abandoning or emptying his container, and fleeing on perceiving the approach of the Sanitary Inspector.

Information had been received, as to the existence of an organisation, which accepted regular contributions from the milksellers, in return for which it settled their fines. (Increased severity) on the part of the magistrates by increasing the extent of the fines and inflicting imprisonment, did much towards smashing this combine.

During the year, 379 samples of milk were taken and transmitted to the Government Analyst, and of these, 166 or 43.8% were found to be genuine, and 213 or 56.2% sophisticated.

Warning was given in 78 cases, and legal action taken in 72 cases, resulting in 67 fines to a total of Rs. 3,150, as against Rs. 1,425 for the previous year.

Five offenders were committed to jail for periods varying from 15 days to 3 months.

ANNEXURE

Statement of inspections by the Sanitary Staff, and action taken thereanent during the year 1929.

E. R. W. GILMORE,
M. O. H., Port Louis.

July, 1930.

STATEMENT SHOWING INSPECTION AND ACTION TAKEN BY THE SANITARY STAFF DURING YEAR 1929.

1	Number of visits paid to :—	
	1. Private Premises	13,025
	2. Lodging houses	551
	3. Shops	1,261
	4. Markets	185
	5. Bakehouses	201
	6. Slaughter houses	53
	7. Butcher's shops	107
2	Special enquiries in regard to Sanitary Matters	614
3	Control of cremation	37
4	,, exhumation	...
5	Testing of milk in how many tests?	117
6	No. of Stables Inspected	569
7	No. of pigsties ,,	637
8	No. of cowsheds ,,	921
9	Performance of night soil service checked on how many times ?	802
10	How has the work been performed?	Satisfactorily
11	Government Establishment visited on how many times?	750
12	Public latrines ,, ,,	1,209
13	Private and Gratuitous ,, ,,	94
14	Noxious factories ,, ,,	193
15	Camps of labourers ,, ,,	185
16	Docks ,, ,,	65
17	Water Courses ,, ,,	1,048
18	Cemeteries ,, ,,	85
19	Sea Shores ,, ,,	279
20	No. of visits paid to Wastelands in Port Louis...	1,033
21	Disinfection of Private Premises on how many occasions?	794
22	Attendance of Sanitary Inspectors at Law Court	155
23	Dhobies Workshops visited how many times?	205
24	Lighters in Harbour	435
25	Nuisances on private premises	2,153
26	Notices and requests issued	742
27	Number complied with	413
28	Nomber not complied with	455
29	Contravention of sanitary enactment detected	576
30	Cases prosecuted	185
31	Amount of fines	Rs. 4,173.17
32	Abatement of nuisances existing in the town of Port Louis	907
33	Number complied with...	424
34	Number not complied with	859
35	Scavenging Service how performed?	Satisfactorily
36	No. of Orders issued by Sanitary Authority for improvement, and removal of nuisances completed in accordance with Ordinance 47 of 1925 ...	153
36^{bis}	Number complied with	115
37	Number referred to Public Works Department	407
38	,, Railways ,,	23
39	,, War ,,	38
40	,, Forests ,,	164
41	,, Public Instructions ,,	2
42	,, Mayor of Port Louis ,,	11
43	,, Customs ,,	1
44	,, Immigration ,,	9
45	,, Sanitary Engineer ,,	311
46	,, Drainage ,, ,,	8
47	Number of premises connected with the main pipe	170
48	Nuisances bearing on Public Health referred to Goverment for Action ...	617

APPENDIX IV

REPORT ON THE MENTAL HOSPITAL FOR THE YEAR 1929

The total number of certified insane persons in the Colony on 31.12.29 was 759, compared with 686 for 1924, 700 for 1925, 719 for 1926, 729 for 1927 and 784 for 1928.

2. The following table shows the distribution of the 759 certified insane persons in the Colony on 31.12.29:

	General			Indian			Chinese			Total
	M	F	T	M	F	T	M	F	T	
At Mental Hospital	183	168	351	164	93	257	13	2	15	623
On probation leave	28	42	70	34	27	61	1	...	1	132
On leave under G.N 239/24	3	1	4	...	...	...	...	...	...	4
Total	214	211	425	198	120	318	14	2	16	759

The percentage sex distribution of the 759 certified insane was males 56.1 and females 43.8, compared with males 51.3 and females 48.7 for the estimated population of the Island on 31.12.29.

3. The following table gives the insane rate per 10,000 of the population of the Island calculated on the number of certified insane persons in the Colony on 31.12.29:

	M	F	T
General population ...	38.2	35.4	36.8
Indian population ...	13.6	8.8	11.3
Chinese population ...	21.2	8.0	17.6
Total ...	20.4	16.8	18.7

The above table shows that insanity is more prevalent among males than females especially so in the case of Indians and Chinese. The total insane rate for the "General" population is more than three times that for Indians and approximates more to the British and American rate of 37 per 10,000 of the population.

The total insane rate per 10,000 of the population of the Island for the years 1924 to 1929 is given hereunder:

For 1924 ...	17.6
„ 1925 ...	17.7
„ 1926 ...	18.0
„ 1927 ...	18.1
„ 1928 ...	18.4
„ 1929 ...	18.7

These figures seem to show that there is a gradual but slight increase in the incidence in the Island.

4.—*Hospital population*

There were 630 inmates (364 males and 266 females) in Hospital on 31.12.29. Of these 4 males and 3 females were under interim detention awaiting examination by the Commissioners of Lunacy, so that the total number of certified insane persons in hospital on the above date was 623 (360 males and 263 females) compared with 594 (337 males and 257 females) on 31.12.28. Included in the 623 certified patients were 15 male and 13 female paying patients. The daily average number resident was 619 (males 357 and females 262) compared with 612 for 1928; 612 for 1927; 582 for 1926; 557 for 1925.

The maximum daily number resident during the year was 643 (males 374 females 269) compared with 643 (males 363 females 280) for 1928.

5.—*Criminal Mental patients*

	M	F	T
In hospital on 31.12.28	11	...	11
Admitted during 1929	3	...	3
Readmitted from probation leave	1	...	1
Discharged or dealt with under Article 60 Ord. 23 of 1906 ...	1	...	1
Died during 1929	...	...	...
Remaining on 31.12.29	14	...	14

6. Of the 3 male criminal mental patients admitted during the year one, S. G............, aged 28, an untried prisoner indicted for rape, suffered from acute melancholia. Another, E. L.........., aged 28, committed for wounds and blows, was found to suffer from Epilepsy. The third criminal mental patient R. N............, aged 77, was arrested for disturbing public worship. He suffered from chronic delusional insanity.

7. The following table shows the duration in hospital to 31.12.29 of the 623 certified resident patients :—

	M	F	T
1 year or less ...	67	28	105
Between 1 and 2 years ...	33	25	58
„ 2 „ 3 „ ...	24	14	38
„ 3 „ 4 „ ...	23	20	43
„ 4 „ 5 „ ...	24	11	35
„ 5 „ 6 „ ...	20	18	38
„ 6 „ 7 „ ...	21	7	28
„ 7 „ 8 „ ...	12	8	20
„ 8 „ 9 „ ...	14	8	22
„ 9 „ 10 „ ...	7	9	16
„ 10 „ 15 „ ...	26	45	71
„ 15 „ 20 „ ...	33	31	64
„ 20 „ 25 „ ...	24	10	34
„ 25 „ 30 „ ...	18	10	28
Over 30 years ...	14	9	23
Total ...	360	263	623

It will be seen from the above table that more than half of the total number of patients have been in hospital 5 years or more, the prognosis in the majority of these cases being hopeless.

8.—*Admissions*

	1928			1929		
	M	F	T	M	F	T
1st admissions	41	39	80	55	38	93
2nd „	5	2	7	15	8	23
3rd „	1	2	3	2	...	2
4th „	...	...	...	1	...	1
Readmissions from probation leave	23	18	41	32	16	48
„ from leave under G. N. 239/24 ...	20	11	31	33	16	49
Admitted under interim detention, later found not to be proper persons to be kept in hospital and accordingly released	28	15	43	21	13	34
Admitted under interim detention still awaiting examination by Commissioners on 31.12.29 ...	3	2	5	4	4	8
Admitted under interim detention and died whilst so detained	1	1	2	1	...	1
Total ...	122	90	212	164	95	259

The above table shows that in 1929 there were admitted into the Mental Hospital, as certified insane patients, (1st, 2nd, 3rd & 4th admissions) a total of 119 persons (73 males and 46 females), hereunder referred to as direct admissions.

9. Table showing the districts whence came the 119 direct admissions and the insane rate per 10,000 of the population of such districts :—

Districts	No. of direct admissions	Estimated population of districts on 31.12.29	Insane rate per 10,000 of population
Port Louis	33	54,147	6.0
Plaines Wilhems	36	89,336	4.0
Grand Port	10	51,963	1.9
Pamplemousses	6	37,550	1.6
Rivière du Rempart ...	4	34,501	1.1
Savanne	12	35,282	3.4
Moka	12	33,605	3.5
Black River	1	14,087	0.7
Flacq...	4	55,078	0.7
Rodrigues	1	..	...
Total ...	119	405,549	...

From the above it will be seen that the incidence of insanity is much lower in the agricultural districts as compared with the industrial and commercial district of Port Louis

As usual, the largest number of direct admisssions came from the districts of Port Louis and Plaines Wilhems.

10. The following table shows the probable causes of insanity in the case of 119 direct admissions:

Causes	M.	F.	T.
Heredity :			
Insane	8	13	21
Epileptic	3	...	3
Neurotic	1	...	1
Marked eccentricity and alcoholism	...	..	...
Mental Instability :			
Moral deficiency and eccentricity	...	...	...
Feeblemindedness	2	1	3
Deprivation of special senses			
Critical periods :			
Puberty and adolescence	...	1	1
Climacteric	...	4	4
Senility	2	1	3
Child bearing :			
Pregnancy	...	...	...
Puerperium not septic	...	8	8
Lactation	...	1	1
Mental Stress :			
Sudden	7	5	12
Prolonged	14	10	24
Physiological defects and errors :			
Malnutrition in early life	...	...	...
Privation and starvation	...	...	...
Overexertion—physical	...	...	...
Masturbation and sexual excess	...	...	...
Traumatic :			
Injuries	3	...	3
Operations	1	1	2
Sunstroke	...	...	...
Diseases of Nervous System :			
Brain lesions	...	1	1
Lesions of spinal cord and nerves	...	...	...
Epilepsy	11	5	16
Convulsions	2	2	4
Neuroses	...	1	1
Night terrors	...	...	...
Toxic :			
Syphilis	5	...	5
Alcohol	16	...	16
Drugs, e.g. gandia, opium etc.	...	...	...
Lead and other metals	...	...	...
Malaria	16	8	24
Influenza	2	3	5
Enteric	2	...	2
Other specific fevers	4	...	4
Sepsis : dental, puerperal, tensils, sinuses etc.	...	...	...
Ankylostomiasis	13	2	15
Phthisis	...	...	...
Dysentery : amoebic	4	...	4
„ : bacillary	...	...	...
„ : other types	3	...	3
Other toxics	...	...	...
Other Bodily affections :			
Arteriosclerosis	1	...	1
Other cardio vascular lesions	...	...	...
Renal	...	...	..
Respiratory	...	1	1
Thyroid and pituitary disorders	...	...	...
Béri-béri, pellagra, diabetes, uraemia	...	...	...

In examining the above table it must be borne in mind that one or more of the causes enumerated therein may be responsible for the production of the mental illness, hence the excess of the aggregate of such causes over the number of patients considered.

As usual, heredity, mental stress, alcohol, elilepsy, malaria and ankylostomiasis are prominent etiological factors.

ALCOHOLISM.

11. Of the 16 alcoholic admitted during the year 10 were Creoles and 6 Indians, compared with a total of 13 for 1928 of whom 7 were Creoles, 5 Indians and 1 Chinese. The 16 alcoholics were all males.

The following table gives the districts whence came the alcoholics admitted during 1927, 1928 and 1929:

Districts	1927	1928	1929
Port Louis	1	6	7
Plaines Wilhems	4	4	3
Rivière du Rempart ...	2	1	1
Savanne	...	1	1
Grand Port	2	...	1
Moka	...	1	1
Flacq	...	...	...
Pamplemousses	...	...	2
Black River	...	...	...
Total ...	9	13	16

DISCHARGES

12. The total number of discharges during the year was 196 as against 209 in 1928. The following table shows the classification of discharges for 1928 and 1929:

	1928			1929		
	M	F	T	M	F	T
Discharged recovered	2	1	3	1	4	5
,, relieved	47	34	81	63	42	105
,, not improved	...	2	2	2	3	5
Harmless dements transferred to Poor Law Infirmaries	17	27	44	...	...	...
Discharged on leave under G.N. 239/24	21	13	34	33	14	47
Discharged by Supreme Court to proceed overseas ...	1	...	1	...	...	...
Alleged mental patients found sane and released ...	30	14	44	21	13	34
Total	118	91	209	120	76	196

The percentage of discharges (recovered, relieved, not improved) to admissions (direct admissions plus readmissions from probation) was 68.8—males 62.8, females 79.0—compared with 65.6 for 1928—males 70.0, females 60.6. During the year, 90 patients (45 males, 45 females), out on probation leave, were found cured and finally discharged.

DEATHS.

13. During the year there were 22 deaths (males 14, females 8) as against 20 in 1928 (males 13, females 7). Of these deaths 3 took place within one month of admission at the Mental Hospital and were mainly due to the poor state of health of the patients admitted.

The death rate, calculated on the daily average number of patients resident, was 3.55%—males 3.92% and females 3.05%—compared with 3.26% for 1928—males 3.72% and females 2.67%.

Causes	M.	F.	T.
Status Epilepticus	2	2	4
Acute lobar pneumonia	1	2	3
Acute broncho-pneumonia	2	...	2
Malaria	2	...	2
Ankylostomiasis	1	1	2
Chronic Nephritis	2	...	2
Acute pleurisy	1	...	1
Alcoholic Cirrhosis of liver	1	...	1
Anæmia	...	1	1
Acute pancreatitis	1	...	1
Phthisis	...	1	1
Acute enteritis	...	1	1
Senility	1	...	1
Total...	14	8	22

9 *post-mortem* examinations were made, giving a percentage of 40.9 of total deaths.

PREVALENCE OF SICKNESS.

14. *Prevalence of Sickness.*—The following table gives the number of cases treated in both infirmaries, the daily average of sick and the sick rate for the years 1928 and 1929.

	1928			1929		
	M.	F.	T.	M.	F.	T.
No. of cases treated in Infirmaries ...	153	121	274	257	168	425
Daily average of sick in Infirmaries ...	3.33	2.55	5.89	4.98	5.57	10.28
Sick rate per cent calculated on daily average in hospital ...	0.98	0.97	0.96	1.39	2.01	1.65

The increased sick rate for 1929 as compared with 1928 is mostly due to the Influenza epidemic of March and April.

15. Table of monthly admissions into the two Infirmaries, total stay therein, and average stay per patient for the years 1928 and 1929 :

1928			
Months	M.	F.	T.
January	10	16	26
February	9	12	21
March	16	11	27
April	7	2	9
May	10	9	19
June	4	12	16
July	16	8	24
August	16	9	25
September... ...	21	9	30
October	13	11	24
November... ...	19	10	29
December	12	12	24
Total...	153	121	274
Total stay in days	1,212	890	2,102
Average stay per patient...	7.92	7.35	7.67

1929			
Months	M.	F.	T.
January	17	13	30
February	13	11	24
March	55	21	76
April	35	13	48
May	29	23	52
June	11	16	27
July	11	11	22
August	23	18	41
September ...	18	6	24
October	16	18	34
November... ...	16	9	25
December	13	9	22
Total...	257	168	425
Total stay in days	1,960	1,880	3,840
Average stay per patient...	7.66	11.19	9.03

16. The following table shows the monthly admissions into both Infirmaries for the commoner diseases:—

Diseases	January	February	March	April	May	June	July	August	September	October	November	December	Total
Influenza	...	...	51	18	...	...	...	13	4	1	..	3	90
Malaria	5	5	6	10	11	5	5	1	2	2	2	...	54
Epilepsy	7	6	5	2	12	3	2	2	3	7	2	2	53
Abscesses	1	2	2	4	3	1	...	3	1	4	2	3	26
Ulcers	...	1	...	1	2	3	1	2	2	1	...	5	18
Wounds, accidental ...	3	1	1	1	...	...	2	3	1	1	1	2	16
Boils	...	1	3	...	5	1	3	...	...	...	...	...	13
Dysentery amoebic ...	...	...	1	...	3	...	1	...	1	...	...	...	6
„ other types ...	...	...	...	1	...	1	2	1	1	2	4	1	13
Ankylostomiasis ...	...	1	...	3	3	2	...	...	...	1	2	...	12
Eczema	...	1	...	...	1	...	1	1	...	3	...	...	7
Chronic Nephritis ...	1	...	...	...	1	1	1	1	...	...	1	...	6
Asthma	1	1	...	...	...	...	...	...	...	2	...	1	5
Lobar pneumonia ...	...	...	...	...	...	...	...	2	...	...	1	1	4
Cellulitis	...	...	1	...	1	...	1	1	...	..	...	...	4
Broncho-pneumonia ...	...	...	2	...	...	...	...	...	1	...	...	...	3
Phthisis	1	...	...	1	...	...	...	...	...	...	...	...	2
Acute gastritis... ...	...	...	...	...	...	...	...	1	3	...	...	...	4
Acute enteritis... ...	...	...	...	...	...	...	...	1	1	1	1	...	4

17. *Infectious and allied diseases.*

Dysentery cases numbered 19 in 6 of which the Entamœba Hystolytica was found microscopically.

There were 90 cases of Influenza mostly occurring in March and April. Malaria accounted for 54 cases compared with 51 in 1928.

During the year 1 case of phthisis needed active treatment. This patient died in July. At present no patient is known to suffer from any form of tuberculosis. There were no cases of Enteric.

18. *Escapes, Violence, etc.*

There were no cases of suicide or homicide.

Three patients escaped and were all recaptured and brought back to hospital within a day or so of their absence.

The types and number of cases of injury sustained by patients were as follows :—

Self-inflicted	6
Inflicted by attendants	0
„ „ patients	88
„ „ accidentally	43

All these injuries were of a trivial nature except :

(i) a dislocated shoulder due to an accidental fall ;

(ii) a traumatic synovitis of the knee joint due to being hit by a stone thrown by a patient ;

(iii) two fractured clavicles due, in one case, to an accidental fall and, in the other, to being pushed down by another patient ;

(iv) a serious cut of the nose through being hit by a patient with a bucket ;

(v) a fracture of the metacarpal bone sustained during a quarrel with another patient ;

(vi) a punctured wound of the index finger due to another patient's bite. Cellulitis and necrosis followed, necessitating amputation of that digit.

On 25 occasions, Nurses, Warders or Servants were injured by patients, all injuries being of a trivial nature.

19. Table showing the classification of the 623 certified patients in hospital on 31.12.29, according to the type of mental disorder :—

	M.	F.	T.
Primary Dementia	31	7	38
Senile Dementia	6	3	9
Terminal Dementia	147	132	279
Amentia with Epilepsy	24	7	31
„ without Epilepsy	12	8	20
Mania, recent	7	14	21
„ recurrent	6	12	18
„ chronic	3	13	16
Melancholia, recent	11	7	18
„ recurrent	...	...	...
„ chronic	6	6	12
Alternating insanity	5	2	7
Paranoia	5	2	7
Paraphrenia	7	8	15
Other types of delusional insanity	7	6	13
Confusional insanity	40	1	41
Epileptic insanity	37	35	72
General paralysis of the Insane	3	...	3
Volitional Insanity	...	...	...
Moral Insanity	3	...	3
Total	360	263	623

20.—*Occupational Treatment*

No workshops are as yet available.—

During the year a daily average of 34 male patients, mostly Indians, attended to the vegetable gardens.—

All the laundry work of the hospital was done by female patients and this, together with ward work, kitchen work, darning and the upkeep of the hospital grounds gave employment daily to an average of 113 male and 90 female patients. The estimated value of the work done by patients during the year was Rs. 15,399.12.

21. *Restraint and Seclusion*

Mechanical restraint—leather wrislets and strait-jackets—was resorted to in the case of 6 males and 4 females and seclusion in the case of 4 males and 5 females.

22. *Recreation*:

During 1929 the Police Band played once a month at the hospital. Two treats were given consisting of cakes, fruit, lemonade and other delicacies. There was also a cinematograph performance—Gramophone music is played during the week and always on Sundays—Cards, draughts, dominoes, chess and loto are favourite games. A few of the male patients play football on the hospital grounds. French and English papers and periodicals were sent us by individuals and institutions interested in the welfare of our patients but the numbers received were far below our requirements. The piano in the female Department was occasionally used by patients, their friends and relatives.

23. *Cost of Maintenance*:

The items making up the average weekly cost, per head, are given in the following table for the period 1.7.28 to 30.6.29.

		Rs. Cs.
Provision, fuel & light, not including Institution garden produce ...		126,908.12
Personal Emoluments		97,984.84
Clothing, bedding, uniforms and washing requsites		23,080.45
Surgery and dispensary—approximately		3,000.00
Implements, stores and sundries		2,364.15
Fees for District Commissioners of Lunacy		2,370.00
Fees for Member of Central Board		252.00
Recreation for patients		1,526.35
Telephones		350.16
Travelling and Transport		746.00
		258,582.07
Less fees received from private patients :	Rs. 8,848.00	
,, sale price of refuse food :	,, 600.00	
		9,448.00
Net total expenditure		249,134.07
Average weekly cost per head		7.74

The average weekly cost per head for the financial years 1926–27, 1927–28 were Rs. 7.91 and Rs. 8.07 respectively.

It is interesting to compare these figures with the average weekly cost per head for English County and Borough Mental Hospitals for the financial year 1926–27 viz. 23 s. 2⅝ d.

24.—STAFF

The staff of the hospital consists of ;—

1 Medical Superintendent.
1 Assistant Medical Superintendent who is also G. M. O. Black River District.
1 Steward and Accountant who also acts as Head Attendant.
1 Dispenser and Storekeeper.
1 Matron.
1 Assistant Matron.
13 Male Warders.
8 Female Nurses.
1 Gatekeeper.
1 Seamstress.
68 Male servants including cooks, gardeners etc.
45 Female servants.

I returned from vacation leave and resumed duty on 13.3.29. On 1.7.29 Dr. R. Comty was transferred to Civil Hospital and was temporarily replaced as Assistant Medical Superintendent by Dr. R. Laventure.

On 13.11.29 Dr. Laventure was transferred to Flacq and replaced by Dr. H. Mollière who also acts as Government Medical Officer of Black River District.

Mr. A. Lebon, Steward and Accountant, was transferred to Civil Hospital on 16.4.29 and replaced by Mr. F. Mason, Medical Storekeeper. Mr. Mason assumed duty on 7.5.29.

On 16.4.29 Mr. D. Davis's acting appointment as Head Attendant ended on reverting to his former post of Dispenser and Storekeeper—Mr. Davis was transferred to Victoria Hospital on 7.8.29 and replaced by Mr. G. D'Assonville, retired Steward and Accountant, Civil Hospital.

Mr. N. Cimiotti, acting Storekeeper and Dispenser, reverted to Warder on 16.4.29.

Warder I. Chamroo was pensioned off in June 1929 and replaced by Warder J. B. A. Suzor who assumed duty on 1.10.29.

Nurse M. Narcisse was found unfit for further service in November 1929 and recommended for retirement.

Warder U. Babet was transferred to Rodrigues on 12.12.29.

On 5.10.29 Miss A. Haskett Assistant Matron, retired on pension after 26 years in the service of Government, 21 of which were spent at the Mental Hospital. As a token of esteem and in appreciation of her long and devoted service the staff presented her with a clock.

25.—VISITS

On 26.11.29 Lady Read visited the Hospital. His Lordship the Bishop of Mauritius visited the Hospital in January, July and November, and His Lordship the Bishop of Port Louis on 8.7.29.

The Commission of Enquiry on the Medical and Health Department visited the Hospital on 21.10.29.

During the year the Central Board of Commissioners of Lunacy held 12 monthly meetings and on each occasion visited the hospital. Two Boards of Survey were held and our accounts and stores were checked three times by the Financial Assistant, Medical and Health Department, and 9 times by an Audit Inspector—No irregularities were detected.

26.—RELIGIOUS SERVICES

During the year mass was said on 11 occasions—There were 3 church of England Services—An average of 37 patients attended each Roman Catholic Service.

27.—CONCLUSION

To conclude I wish to thank the Honourable Medical Director and the other members of the Central Board of Commissioners of Lunacy for their valuable help in improving the the welfare of our patients.

Beau Bassin,
20.3.30,

J. D. DYSON,
M. B. B. S. Lond. D.P.M.
Medical Superintendent, Mental Hospital.

APPENDIX. V.

EXTRACTS FROM MEDICAL OFFICERS' REPORTS, NOT PUBLISHED IN FULL.

1.—WATER SUPPLY IN THE SOUTHERN DISTRICTS.

The Sanitary Warden South refers to certain water supplies in the Southern Districts as follows :—

> "There has been no change in the water supply which remains liable to the same criticism as last year. Towards the latter months of the year, works were begun to lead the overflow of the Grand Bois—Bois Cheri supply to Camp Rabaud, Rivière du Poste and Mare Tabac. The scheme is excellent but I cannot help considering the claims of that portion of Grand Bois and Bois Cheri, which still depends on surface streams and wells should have received priority, the more so as the supply was primarily meant for them, and as they are centres where sporadic cases of enteric occur every year. Another consideration which should not be lost sight of is that close to and within these hamlets are the sources of several streams which supply the denser populations of St. Avold, Britannia and Riviere des Anguilles. Their claims therefore cannot be ignored."

2.—COMMUNICABLE DISEASES IN THE SOUTHERN DISTRICTS.

The following table gives the number of cases of diseases notifiable under Ordinance 47 of 1925.

District	Diphtheria		Typhoid		Erysipelas		Puerperal		Tuberculosis	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Moka	6	1	9	...	...	...	7	...	57	55
Savanne ...	1	...	17	8	..	...	...	...	49	...
Grand Port										
Rose Belle ...	...	...	7	1	2	...	2	2	17	6
Mahebourg ...	3	...	12	3	2	...	1	1	6	...

Influenza and Measles.

In addition to the above observations, Dr. Masson, the Sanitary Warden, South, makes the following remarks regarding Influenza and Measles ;—

"*Influenza.*—The outbreak of influenza which began in March assumed a very grave character in April. Not only were the deaths numerous but the infectious nature and increased virulence of the disease gave rise to apprehension. At New Grove whole families were affected simultaneously, and in one case 4 brothers aged between 25 and 40—members of the same household some 9 members of which were laid up with pneumonia or broncho pneumonia, died within a week.

The elderly people were those who succumbed most and it may well be said that the year has been a very bad one for those over 70. The death roll includes many octogenarians and a few centenarians.

Measles.—An outbreak of measles began towards the end of October, the first cases being reported from New Grove. No. statistics are available as the disease has since the passing of Ordinance 47 of 1925 ceased to be notifiable. Although there have been a few cases of severe character with lung complications no death has been reported.

COMMUNICABLE DISEASES IN PLAINES WILHEMS.

Dr. Momplé reports as follows :—

The following statement shows the number of cases notified in each sanitary section.

Section	Typhoid	Diphtheria	Puerperal Fever	Erysipelas	Tuberculosis
Curepipe	9	13	1	2	21
Vacoas-Phœnix ...	9	5	...	1	23
Rose Hill Beau Bassin Quatre Bornes	38	26	8	16	108
Total ...	56	44	9	19	152

The incidence of typhoid and diphtheria was nearly the same as in the preceding year when 52 and 50 cases respectively were returned. There was no epidemic manifestation. Fatal terminations were 12 for typhoid and 3 for diphtheria; 6 cases of the former and one of the latter being still under treatment at the close of the year. The number of cases of Tuberculosis, 152, compares with 149 for the year before ; 99 of the cases were notified after death.

The higher figures for the Rose Hill section are due to notification to this centre of the cases admitted to the Victoria Hospital. The local cases were ; typhoid 18, diphtheria 22, puerperal fever 3, erysipelas 10 and tuberculosis 74.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1929

Diseases	Remaining in Hospital at end of 1928	Yearly Total		Total cases treated	Remaining in Hospital at end of 1929
		Admissions	Deaths		
I.—Epidemic, Endemic and Infectious Diseases					
1. Enteric Group—					
(*a*) Typhoid Fever ...	2	68	20	70	6
(*b*) Paratyphoid A. ...	...	...	...	...	...
(*c*) Paratyphoid B. ...	...	...	...	...	...
(*d*) Type not defined ...	...	1	...	1	...
2. Typhus ...	...	...	...	...	...
3. Relapsing Fever ...	...	...	...	...	...
4. Undulant Fever ...	...	...	...	...	...
5. Malaria—					
(*a*) Tertian ...	13	1,229	12	1,242	9
(*b*) Quartan ...	...	80	...	80	...
(*c*) Aestivo-autumnal ...	...	4	2	4	...
(*d*) Cachexia ...	...	293	7	293	4
(*e*) Blackwater ...	...	24	1	24	1
(*f*) Quotidian ...	1	351	4	352	6
(*g*) Chronic ...	...	122	15	122	3
(*h*) Irregular ...	3	26	...	29	...
(*i*) Pernicious ...	...	8	5	8	...
(*j*) Type not defined ...	4	617	10	621	6
6. Smallpox—					
Alastrim ...	...	...	...	...	...
7. Measles ...	...	1	...	1	1
8. Scarlet Fever ...	...	...	...	...	...
9. Whooping Cough ...	...	...	...	...	...
10. Diphtheria ...	1	10	1	11	1
11. Influenza ...	5	2,199	92	2,204	4
12. Miliary Fever ...	...	...	...	...	...
13. Mumps ...	...	1	...	1	...
14. Cholera ...	..	...	...	...	...
15. Epidemic diarrhoea ...	...	...	...	...	...
16. Dysentry—					
(*a*) Amœbic ..	4	441	19	445	5
(*b*) Bacillary ...	...	17	...	17	...
(*c*) Undefined or due to other causes ..	...	160	7	160	1
17. Plague —					
(*a*) Bubonic ..	...	...	...	...	...
(*b*) Pneumonic ...	...	...	...	...	...
(*c*) Septicæmic ...	...	...	...	...	...
(*d*) Undefined ...	...	...	...	...	...
18. Yellow Fever ...	...	...	...	...	...
19. Spirochaetosis ictero-hæmorrhagica ...	...	...	...	...	...
20. Leprosy ...	...	4	...	4	...
21. Erysipelas ...	.	27	8	27	1
22. Acute Poliomyelitis ...	...	...	..	...	—
23. Encephalitis Lethargica ...	...	...	...	...	...
24. Epidemic Cerebro-spinal Fever ...	...	...	...	...	...
25. Other Epidemic Diseases—					
(*a*) Rubeola (German Measles) ...	...	1	...	1	...
(*b*) Varicella (Chicken-pox) ...	...	8	...	8	...
(*c*) Kala-azar ..	...	...	...	...	...
(*d*) Phlebotomus Fever ...	...	...	...	...	...
(*e*) Dengue ...	...	...	...	...	...
(*f*) Epidemic Dropsy ...	...	...	...	...	...
(*g*) Yaws ...	...	...	...	...	...
(*h*) Trypanosomiasis ..	...	...	...	...	...
26. Glanders ...	...	...	...	...	...
27. Anthrax ...	...	7	...	7	...
Carried over ...	33	5,699	203	5,732	48

The form shows in the main the arrangement of diseases in the International Nomenclature, 1921 Edition. To save space the unimportant diseases of any class can be grouped in their places as "Other Diseases" of the Class.

* i.e. the year previous to that for which the return is made.

† "Total cases treated" will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on the next year's Return.

Diseases	Remaining in Hospital at end of 1928	Yearly Total		Total cases treated	Remaining in Hospital at end of 1929
		Admissions	Deaths		
Brought forward ...	33	5,699	203	5,732	48
28. Rabies ...	...	...	...	..	...
29. Tetanus ...	1	35	13	36	...
30. Mycosis ...	...	...	..	...	...
31. Tuberculosis, Pulmonary and Laryngeal ...	32	730	142	762	16
32. Tuberculosis of the Meninges or Central Nervous System ...	...	...	...	...	...
33. Tuberculosis of the Intestines or Peritoneum	...	9	4	9	...
34. Tuberculosis of the Vertebral Column ...	...	8	...	8	...
35. Tuberculosis of Bones and Joints ...	1	26	...	27	2
36. Tuberculosis of other organs—					
(*a*) Skin or Subcutaneous Tissue (Lupus)...	...	4	...	4	...
(*b*) Bones ...	...	9	...	9	2
(*c*) Lymphatic System ...	...	28	1	28	1
(*d*) Genito-urinary ...	1	...	...	1	...
(*e*) Other Organs ...	...	2	...	2	...
37. Tuberculosis disseminated—					
(*a*) Acute ...	1	...	...	1	...
(*b*) Chronic ...	...	...	...	...	...
38. Syphilis—					
(*a*) Primary ...	6	70	...	76	...
(*b*) Secondary ...	1	37	...	38	1
(*c*) Tertiary ...	1	87	2	88	2
(*d*) Hereditary ...	8	10	4	18	...
(*e*) Period not indicated ...	2	110	1	112	7
39. Soft Chancre ...	1	161	...	162	6
40. A.—Gonorrhœa and its complications ...	7	210	3	217	1
B.—Gonorrhœal Ophthalmia ..	...	24	...	24	...
C.—Gonorrhœal Arthritis ...	...	10	...	10	...
D.—Granuloma Venereum Warts ..	1	...	...	1	...
41. Septicæmia ...	...	10	7	10	...
42. Other Infectious Diseases—					
Trypanosomiosis ...	...	...	...	...	...
Filariosis ...	4	19	...	23	...
II—*General Diseses not mentioned above*					
43 Cancer or other malignant Tumours of the Buccal Cavity ...	1	7	...	8	...
44. Cancer or other malignant Tumours of the Stomach or Liver ..	...	20	1	20	...
45. Cancer or other malignant Tumours of the Peritoneum Intestines, Rectum ...	1	25	6	26	...
46. Cancer or other malignant Tumours of the Female Genital Organs ...	5	79	6	84	2
47. Cancer or other malignant Tumours of the Breast ...	2	11	..	13	...
48. Cancer or other malignant Tumours of the Skin ...	...	8	..	8	...
49. Cancer or other malignant Tumours of Organs not specified ...	...	16	2	16	...
50. Tumours non-malignant ...	...	66	...	66	2
51. Acute Rheumatism ..	8	259	7	267	6
52. Chronic Rheumatism ...	...	168	2	168	5
53. Scurvy (including Barlow's Disease) ...	...	...	...	...	...
54. Pellagra ...	...	...	...	...	...
55. Beri-Beri ...	...	1	...	1	...
56. Rickets ...	...	1	...	1	...
57. Diabets (not including Insipidus) ...	...	37	1	37	...
58. Anæmia—					
(*a*) Pernicious ...	...	5	1	5	...
(*b*) Other Anæmias and Chlorosis ...	1	242	14	243	4
59. Diseases of the Pituitary Body ...	...	...	...	...	...
Carried forward ...	118	8,243	420	8,361	105

Diseases	Remaining in Hospital at end of 1928	Yearly Total		Total cases treated	Remaining in Hospital at end of 1929
		Admission	Deaths		
Brought forward ...	118	8,243	420	8,361	105
II—*General Diseases not mentioned above* (Ctd.)					
60. Diseases of the Thyroid Gland—		...			
(*a*) Exophthalmic Goitre ...	...	...	...	...	...
(*b*) Other diseases of the Thyroid Gland, Myxœdema ...	...	..	...	...	...
61. Diseases of the Para-Thyroid Glands ...	...	1	...	1	...
62. Diseases of the Thymus ...	...	...	...	...	...
63. Diseases of the Supra-Renal Glands ...	...	19	...	19	...
64. Diseases of the Spleen ...	...	...	...	...	...
65. Leukæmia—					
(*a*) Leukæmia ...	...	...	...	...	...
(*b*) Hodgkin's Disease ...	1	46	8	47	...
66. Alcoholism ...	...	28	...	2.	...
67. Chronic poisoning by mineral subtances (lead, mercurry, &c.) ...	...	...	...	...	...
68. Chronic poisoning by organic subtances (Morphia, Cocaine &c.) ...	...	...	...	...	...
69. Other General Diseases—					
Auto-intoxication ...	...	2	...	2	...
Purpura Hæmorrhagica ...	...	...	...	...	...
Hæmophilia ...	...	...	...	...	...
Diabetes Insipidus ..	...	17	2	17	1
III—*Affections of the Nervous System and organs of the senses*					
70. Encephalitis (not including Encephalitis Lethargica) ...	...	...	...	...	...
71. Meningitis (not including Tuberculous Meningitis or Cerebrospinal Meningitis)...	1	10	7	11	...
72. Locomotor Ataxia ...	...	...	...	...	...
73. Other affections of the Spinal Cord ...	...	1	...	1	...
74. Apoplexy—					
(*a*) Hæmorrhage ...	3	34	9	37	...
(*b*) Embolism ...	...	1	...	1	...
(*c*) Thrombosis ...	...	5	...	5	...
75. Paralysis—					
(*a*) Hemiplegia ...	...	59	1	59	1
(*b*) Other Paralyses ...	1	21	...	22	...
76. General Paralysis of the Insane ...	..	2	...	2	...
77. Other forms of Mental Alienation ...	...	..	...	...	...
78. Epilepsy ...	3	94	6	97	1
79. Eclampsia, Convulsions (non-puerperal) 5 years or over ...	...	4	2	4	...
80. Infantile Convulsions ...	...	7	2	7	...
81. Chorea ...	...	6	...	6	...
82. A—Hysteria ...	...	11	...	11	...
B—Neuritis ...	2	27	...	29	...
C—Neurasthenia ...	...	8	...	8	...
83. Cerebral Softening	...	2	1	2	..
84. Other affections of the Nervous System, such as Paralysis Agitans ...	2	32	...	34	1
85. Affections of the Organs of Vision—					
(*a*) Diseases of the eye ...	...	88	...	88	4
(*b*) Conjunctivitis ...	2	89	...	91	2
(*c*) Trachoma ...	...	20	...	20	...
(*d*) Tumours of the Eye ...	...	3	...	3	1
(*e*) Other affections of the Eye ...	6	248	...	254	6
86. Affections of the Ear or Mastoid Sinus ...	1	107	4	108	1
IV—*Affections of the Circulatory System*					
87. Pericarditis ...	...	3	...	3	...
88. Acute Endocarditis or Myocarditis ...	...	61	11	61	3
89. Angina Pectoris ...	...	3	...	3	..
Carried over ...	140	9,302	473	9,442	126

Diseases	Remaining in Hospital at end of 1928	Yearly Total		Total cases treated	Remaining in Hospital at end of 1929
		Admissions	Deaths		
Brought forward ...	140	9,302	473	9,442	146
IV.—*Affections of the Circulatory System* (Ctd.)					
90. Other Diseases of the Heart—					
(*a*) Valvular—					
Mitral ...	3	175	42	178	2
Aortic ...	1	4	3	5	...
Tricuspid ...	...	...	...	...	...
Pulmonary ...	...	...	...	...	...
(*b*) Myocarditis ...	...	30	8	30	...
91. Diseases of the Arteries—					
(*a*) Aneurism ...	...	1	...	1	...
(*b*) Arterio-Sclerosis ...	2	59	4	61	2
(*c*) Other diseases ...	...	11	...	11	...
92. Embolism or Thrombosis (non-cerebral) ...	...	1	1	1	...
93. Diseases of the Veins—					
Hæmorrhoids ...	...	132	...	132	...
Varicose Veins ...	...	18	...	18	3
Phlebitis ..	...	4	1	4	...
94. Diseases of the Lymphatic System—					
Lymphangitis ..	...	56	1	56	1
Lymphadenitis, Bubo (non-specific) ...	2	137	...	139	2
95. Hæmorrhage of undetermined cause ...	...	...	...	...	...
96. Other affections of the Circulatory System..	...	26	2	26	2
V—*Affections of the Respiratory System*					
97. Diseases of the Nasal Passages—		3	...	3	...
Adenoids ..	...	15	...	15	...
Polypus ...	...	16	...	16	...
Rhinitis ...	...	9	...	9	...
Coryza ..	...	7	...	7	1
Sinusitis ..	...	5	...	5	1
Deviation Nasal Sputum ...	...	2	...	2	...
98. Affections of the Larynx—					
Laryngitis ...	...	11	...	11	...
Trachitis ...	...	1	...	1	...
Structure of Larynx ...	1	178	2	179	4
99. Bronchitis—					
(*a*) Acute ...	3	410	32	413	6
(*b*) Chronic ...	3	206	13	209	6
100. Broncho-Pneumonia ...	...	106	51	106	3
101. Pneumonia ...	...	75	22	75	...
(*a*) Lobar ...	3	110	45	113	3
(*b*) Unclassified ...	2	253	76	255	11
102. Pleurisy, Emphysema ...	2	60	9	62	...
103. Congestion of the Lungs ...	...	15	6	15	...
104. Gangrene of the Lungs ...	...	12	1	12	...
105. Asthma ...	6	302	14	308	5
106. Pulmonary Emphysema ...	...	19	2	19	...
107. Other affections of the Lungs—					
Pulmonary Spirochætosis ...	...	2	...	2	...
VI.—*Diseases of the Digestive System*					
108. A.—Diseases of Teeth or Gums—					
Caries, Pyorrhœa, &c. ...	1	248	...	249	2
B.—Other affections of the Mouth—					
Stomatitis ..	...	19	...	19	...
Glossitis, &c. ...	...	2	...	2	...
109. Affections of the Pharynx or Tonsils—					
Tonsillitis ...	...	148	...	148	1
Pharyngitis ...	1	19	...	20	1
110. Affections of the Œsophagus ...	1	8	1	9	...
111. A.—Ulcer of the Stomach ...	2	50	3	52	1
B.—Ulcer of the Duodenum ...	..	39	2	39	1
112. Other affections of the Stomach—					
Gastritis ...	2	184	...	186	1
Dyspepsia, etc. ...	1	211	...	212	...
Carried over ...	176	12,701	814	12,877	185

Diseases	Remaining in Hospital at end of 1928	Yearly Total		Total cases treated	Remaining in Hospital at end of 1929
		Admissions	Deaths		
Brought forward ..	176	12,701	814	12,877	185
VI.—*Diseses of the Digestive System.*—(Contd.)					
113. Diarrhœa and Enteritis—					
Under two years ...	1	152	31	153	4
114. Diarrhœa and Enteritis—					
Two years and over ...	7	395	51	402	3
Colitis ...	...	37	8	37	1
Ulceration ...	...	1	...	1	...
114a Sprue ...	..	...	...	...	...
115. Ankylostomiasis ...	15	1,924	60	1,939	16
116. Diseases due te Intestinal Parasites—					
(*a*) Cestoda (Tænia) ...	...	15	...	15	...
(*b*) Trematoda (Flukes) ...	...	1	...	1	...
(*c*) Nematoda (other than Ankylostoma)—					
Ascaris ...	...	73	1	73	...
Trichocephalus dispar. ...	1	42	2	43	...
Trichina ...	...	...	...	...	...
Dracunculus ...	...	15	1	15	1
Strongylus ...	...	25	...	25	...
Oxyuris ...	...	2	...	2	...
(*d*) Coccidia ...	...	...	...	...	...
(*e*) Other parasites ...	...	1	...	1	...
(*f*) Unclassified ...	...	17	...	17	...
117. Appendicitis ...	6	195	5	201	5
118. Hernia ...	4	107	6	111	4
119. A.—Affections of the Anus, Fistula, &c. ...	1	125	...	126	1
B.— Other affections of the Intestines—					
Enteroptosis ...	...	12	5	12	...
Constipation ...	...	95	...	95	...
120. Acute Yellow Atrophy of the Liver ...	...	6	...	6	...
121. Hydatid of the Liver ...	...	...	...		
122. Cirrhosis of the Liver—					
[*a*] Alcoholic ...	...	4	1	4	1
[*b*] Other forms ...	1	27	5	28	...
123. Biliary Calculus ...	...	...	..		
124. Other affections of the Liver— ...	...	12	1	12	...
Abcess ...	1	23	7	24	...
Hepatitis ...	...	84	1	84	2
Cholecystitis ...	1	60	1	61	1
Jaundice ..	...	10	1	10	...
125. Diseases of the Pancreas ...	...	2	2	2	...
126. Peritonitis (of unknown cause) ..	2	6	3	8	...
127. Other affections of the Digestive System ...	1	106	7	107	2
VII—*Diseases of the Genito-urinary System (non-Venereal.)*					
128. Acute Nephritis ...	5	416	67	421	3
129. Chronic ...	4	126	18	130	4
130. A.— Chyluria ...	...	17	...	17	...
B.— Schistosomiasis ...	...	96	2	96	2
131. Other affections of the Kidneys—					
Pyelitis, etc.	...	23	3	23	...
132. Urinary Calculus ...	...	23	1	23	1
133. Diseases of the Bladder— ...	...	1	..	1	...
Cystitis ...	1	80	2	81	2
134. Diseases of the Urethera—					
[*a*] Stricture ...	1	48	2	49	2
[*b*] Other ...	...	48	1	48	...
135. Diseases of Prostate—					
Hypertrophy		9	...	9	...
Prostatitis ...	...	17	2	17	1
Carried over ...	228	17,179	1,111	17,407	241

Diseases	Remaining in Hospital at end of 1928	Yearly Total		Total cases treated	Remaining in Hospital at end of 1929
		Admissions	Deaths		
Brought forward	228	17,179	1,111	17,407	241
VII.—*Diseases of the Genito-urinary System (non-Venereal)*					
136. Diseases (non-Venereal) of the Genital Organs of Man—	...	11	...	11	...
Epididymitis	...	8	...	8	...
Orchitis	2	91	...	93	1
Hydrocele	2	212	...	214	2
Ulcer of Penis	...	11	...	11	...
137. Cysts or other non-malignant Tumours of the Ovaries	...	30	1	30	...
138. Salpingitis—	1	74	4	75	2
Vulvitis	...	1	...	1	...
139. Uterine Tumours (non-malignant	1	18	1	19	...
140. Uterine Hæmorrhage (non-puerperal)	...	31	...	31	1
141. A.—Metritis	...	34	...	34	...
B.—Other affections of the Female Genital Organs—	...	16	...	16	..
Displacements of Uterus	...	25	...	25	...
Amenorrhœa	...	5	...	5	...
Dysmenorrhœa	...	11	...	11	...
Leucorrhœa	...	46	...	46	...
142. Diseases of the Breast (non-puerperal)—	...	2	...	2	...
Mastitis	...	16	...	16	...
Abcess of Breast	1	82	...	83	...
VIII.—*Puerperal State*					
143. A.—Normal Labour	6	483	...	489	15
B.—Accidents of Pregnancy—					
[*a*] Abortion	1	70	3	71	3
[*b*] Ectopic Gestation	...	7	1	7	...
[*c*] Other accidents of Pregnancy	...	29	5	29	...
144. Puerperal Hæmorrhage	...	2	2	2	...
145. Other accidents of Parturition	1	6	4	7	...
146. Puerperal Septicæmia	1	29	13	30	1
147. Phlegmasia Dolens (Hydatifome Mole)	...	1	...	1	...
148. Puerperal Eclampsia	...	8	3	8	...
149. Sequelæ of Labour	...	6	2	6	...
150. Puerperal affections of the Breast (Gestatia)	...	62	...	62	2
IX.—*Affections of the Skin and Cellular Tissues.*					
151. Gangrene	...	47	6	47	3
152. Boil	...	20	...	20	...
Carbuncle	...	37	...	37	1
153. Abcess	14	1,225	9	1,239	44
Whitlow	11	138	...	149	3
Cellulitis	8	286	8	294	6
154. A.—Tinea	...	161	...	161	...
B.—Scabies	...	126	...	126	...
155. Other Diseases of the Skin—	13	114	...	127	8
Brythema	...	164	...	164	6
Urticaria	1	35	...	36	...
Eczema	2	115	...	117	2
Herpes	...	7	...	7	...
Psoriasis	...	12	...	12	...
Elephantiasis	...	28	2	28	...
Myiasis	...	1	...	1	...
Chigœs	...	18	...	18	...
Cutaneous Leishmaniasis	...	...	...	...	...
Ulcer	...	21	...	21	...
Impetigo	...	2	...	2	...
X.—*Diseases of the Bones and Organs of Locomotion (other than Tuberculous)*					
156. Diseases of Bones—(Caries)	...	10	...	10	1
Osteitis	1	42	...	43	3
Carried over	294	21,215	1,175	21,509	345

Diseases	Remaining in Hospital at end of 1928	Yearly Total		Total cases treated	Remaining in Hospital at end of 1929
		Admissions	Deaths		
Brought forward ...	294	21,215	1,175	21,509	345
X.—*Diseases of the Bones etc.*—(Contd.)					
157. Diseases of Joints—					
Arthritis ...	...	77	6	77	3
Synovitis ...	...	31	...	31	...
158. Other Diseases of Bones or Organs of Locomotion	...	58	...	58	...
XI.—*Malformations.*					
159. Malformations— ...	...	2	...	2	...
Hydrocephalus ...	...	1	...	1	...
Hypospadias ...	...	2	...	2	...
Spina Bifina, &c. ...	...	7	...	7	...
Harelip ...	...	2	...	2	...
XII.—*Diseases of Infancy.*					
160. Congenital Debility ...	2	48	29	50	...
161. Premature Birth	...	43	18	43	...
162. Other affections of Infancy ...	...	2	...	2	...
163. Infant neglect (infants of three months or over) ...	...	...	...	...	...
Not specified ...	..	54	7	54	6
XIII.—*Affections of Old Age*					
164. Senility— ...	...	115	13	115	2
Senile Dementia ...	...	3	...	3	. .
XIV.—*Affections produced by External Causes.*					
165. Suicide by Poisoning ...	...	...	...		...
166. Corrosive Poisoning (intentional) ...	...	2	...	2	...
167. Suicide by Gas Poisoning ...	..	...	...	...	...
168. Suicide by Hanging or Strangulation (attempt at) ...	...	1	...	1	...
169. Suicide by Drowning ...	...	...	...	...	...
170. Suicide by Firearms ...	...	...	...	...	...
171. Suicide by cutting or stabbing Instruments	...	...	...	...	...
172. Suicide by jumping from a height ...	...	..	...	...	...
173. Suicide by crushing ...	...	...	...	...	...
174. Other Suicides ...	...	...	...	...	...
175. Food Poisoning—					
Botulism ...	...	1	...	1	...
176. Attacks of poisonous—					
Snake Bite ...	...	...	...	...	...
Insect Bite ...	...	...	...	...	...
177. Other accidental Poisonings ...	...	9	...	9	...
178. Burns (by Fire) ...	3	85	21	88	2
179. Burns (other than by Fire) ...	...	42	3	42	1
180. Suffocation (accidental) ...	...	..	...	...	...
181. Poisoning by Gas (accidental) ...	...	...	...	...	...
182. Drowning (accidental) ...	...	...	...	...	...
183. Wounds (by Firearms, war excepted) ...	1	11	1	12	...
184. Wounds (by cutting or stabbing Instruments) ...	6	639	...	645	4
185. Wounds (by Fall)	4	79	...	83	4
186. Wounds (by blunt instrument) ...	...	581	9	581	11
187. Wounds (by Machinery) ...	...	2	1	2	...
188. Wounds (crushing *e.g.* railway accidents &c.)	3	42	6	45	...
189. Injuries inflicted by Animals, Bites, Kicks, etc. ...	...	20	1	20	...
190. Wounds inflicted on Active Service ...	...	...	...	...	...
191. Executions of civilians by belligerents ...	...	...	..	...	...
192. A.—Over fatigue ...	...	...	...	...	...
B.—Hunger or Thirst ...	...	...	...	...	...
193. Exposure to Cold, Frost bite &c. ...	...	...	...	...	...
194. Exposure to heat—					
Heatstroke ..	...	...	...	...	...
Sunstroke ...	...	...	...	...	...
Carried over ...	313	23,174	1,290	23,487	378

Diseases	Remaining in Hospital at end of 1928	Yearly Total		Total cases treated	Remaining in Hospital at end of 1929
		Admissions	Deaths		
Brought forward ...	313	23,174	1,290	23,487	378
XIV.—*Affections produced by External Causes.—(*Contd.)					
195. Lightening Stroke (Thunder) ...	...	1	...	1	...
196. Electric Shock ...	...	...	...	...	...
197. Murder by Firearms ...	...	...	...	...	...
198. Murder by cutting or stabbing Instruments	...	...	...	...	...
199. Murder by other means ...	...	...	...	...	...
200. Infanticide (Murder of an infant under one year) ...	...	...	...	...	...
201. A.—Dislocation ...	...	29	...	29	...
B.—Sprain ...	...	27	...	27	...
C.—Fracture ...	11	369	6	380	8
202. Other external Injuries ...	11	423	5	434	7
203. Deaths by Violence of unknown cause ...	...	...	...	...	...
XV.—*Ill-Defined Diseases*					
204. Sudden Deaths (cause unknown)— ...	...	...	...	...	...
205. A.—Diseases not already specified ...	21	427	14	448	20
or ill-defined—	...	10	...	10	...
Ascites ...	...	31	...	31	2
Œdema ...	...	1	...	1	...
Asthenia ...	...	5	...	5	...
Shock ...	...	4	4	4	...
Debility ...	...	5	...	5	...
Hyperpyrexia ...	...	4	...	4	...
B.—Malingering ...	4	98	...	102	2
Trephining ...	...	1	...	1	...
Hunger ...	...	...	...	...	...
Strike ...	1	...	...	1	...
Total ...	361	24,609	1,319	24,970	417
Summary					
I.—Epidemic, Endemic, and Infectious Diseases ...	100	7,298	380	7,398	86
II.—General Diseases not mentioned above ...	19	1,058	50	1,077	20
III.—Affections of the Nervous System and Organs of the Senses ...	21	879	32	900	17
IV.—Affections of the Circulatory System ...	8	721	73	729	15
V.—Affections of the respiratory system ...	20	1,817	273	1,837	40
VI.—Diseases of the Digestive System ..	49	4,502	205	4,551	48
VII.—Diseases of the Genito-Urinary System (*non-venereal*) ...	18	1,628	104	1,646	21
VIII.—Puerperal State ...	9	703	33	712	21
IX.—Affections of the Skin and Cellular Tissues ...	49	2,557	25	2,606	73
X.—Diseases of Bones and Organs of Locomotion (*other than Tuberculous*) ...	1	218	6	219	7
XI.—Malformations ...	...	14	...	14	...
XII.—Diseases of Infancy ...	2	147	54	149	6
XIII.—Affections of old age ...	...	118	13	118	2
XIV.—Affections produced by external causes...	39	2,363	53	2,402	37
XV.—Ill-defined diseases ...	26	586	18	612	24
Total ...	361	24,609	1,319	24,970	417

Return of Births

	Number	Deaths
Born alive at term ...	449	10
Prematurely born ...	41	13
Still born ...	88	28
Total ...	578	51

Return of Surgical Operations

Operations	Number	Deaths
Operations for :—		
Tumors ...	58	5
Evacuation of Abcesses ...	1,713	18
Operation on :—		
Blood vessels ...	44	...
Lymphathic Glands ...	178	1
Skin and Subcutaneous Tissues	330	1
Bones ...	138	6
Nerves ...	1	...
Joints ...	68	8
Muscles and Tendons ...	18	...
Skull and Brain ...	15	6
Eye ...	130	...
Ear ...	27	...
Head and Face ...	60	1
Chest ...	43	2
Abdominal Cavity ...	433	33
Spleen ...	1	..
Rectum and Anus ...	18	1
Urinary system ...	96	4
Male Generative Organs ...	330	7
Female Generative Organs ...	175	6
Amputations ...	93	3
Obstetric Operations ...	57	4
Other Operations ...	642	10
Total ...	4,835	116

APPENDIX IV.

RETURN OF DISEASES (*Out Patients*) FOR THE YEAR 1929

Diseases	Male	Female
I.—Epidemic, Endemic and Infectious Diseases		
1. Enteric Group—		
(*a*) Typhoid Fever ...	...	...
(*b*) Paratyphoid A. ..	...	...
(*c*) Paratyphoid B. ...	...	...
(*d*) Type not defined ...	...	...
2. Typhus ...	...	...
3. Relapsing Fever ...	...	...
4. Undulant Fever ...	...	...
5. Malaria— ...	4,196	4,871
(*a*) Tertian ...	4,652	5,078
(*b*) Quartian ...	3,595	3,644
(*c*) Aestivo-autumnal ...	327	299
(*d*) Cachexia ...	728	731
(*e*) Blackwater ...	16	17
(*f*) Quotidian ...	867	580
(*g*) Intermittent ...	627	666
6. Smallpox— ...	...	...
Alastrim ...	...	..
7. Measles ..	...	...
8. Scarlet Fever ...	...	...
9. Whooping Cough ...	...	...
10. Diphteria ...	...	...
11. Influenza ...	12,927	11,636
12. Miliary Fever ...	...	..
13. Mumps ...	...	...
14. Cholera ...	...	...
15. Epidemic diarrhoea ...	...	...
16. Dysentry— ...	20	42
(*a*) Amœbic ...	1,219	888
(*b*) Bacillary ...	223	119
(*c*) Undefined or due to other causes ...	264	214
Carried over ...	29,661	28,785

Diseases	Male	Female
Brought forward	29,661	28,785
17. Plague—		
(*a*) Bubonic	...	...
(*b*) Pneumonic	...	...
(*c*) Septicæmic	...	...
(*d*) Undefined	...	...
18. Yellow Fever	...	...
19. Spirochætosis ictero-hæmorrhagica	...	...
20. Leprosy	9	1
21. Erysipelas	2	4
22. Acute Poliomyelitis	..	...
23. Encephalitis Lethargica	...	...
24. Epidemic Cerebro-spinal Fever	...	...
25. Other Epidemic Diseases—		
(*a*) Rubeola (German Measles)	...	...
(*b*) Varicella (Chicken-pox)	..	..
(*c*) Kala-azar	...	...
(*d*) Phlebotomus Fever	...	...
(*e*) Dengue	...	...
(*f*) Epidemic Dropsy	...	...
(*g*) Yaws	...	...
(*h*) Trypanosomiasis	...	...
26. Glanders	12	11
27. Anthrax	2	...
28. Rabies	...	...
29. Tetanus	4	2
30. Mycosis	1	...
31. Tuberculosis, Pulmonary and Pharyngeal	383	244
32. Tuberculosis of the Meninges or Central Nervous System	...	...
33. Tuberculosis of the Intestine or Peritoneum	...	...
34. Tuberculosis of the Vertebral Column	...	1
35. Tuberculosis of Bones and Joints	...	4
36. Tuberculosis of other organs—		
(*a*) Skin or Subcutaneous Tissue (Lupus)	2	1
(*b*) Bones	...	...
(*c*) Lymphatic System	15	7
(*d*) Genito-urinary	...	5
(*e*) Other Organs	...	2
37. Tuberculosis disseminated—		
(*a*) Acute	173	96
(*b*) Chronic	...	...
38. Syphilis—	40	26
(*a*) Primary	52	28
(*b*) Secondary	45	23
(*c*) Tertiary	89	49
(*d*) Hereditary	30	29
(*e*) Period not indicated	10	14
39. Soft Chancre	75	7
40. A.—Gonorrhœa and its complications	211	63
B.—Gonorrhœal Ophtalmia	6	4
C.—Gonorrhœal Arthritis	22	7
D.—Gonorrhœal Venereum	5	5
41. Septicæmia	...	1
42. Other Infectious Diseases—	1	...
(*a*) Trypanosomiasis	...	...
(*b*) Filariosis	6	5
II.—General Diseases not mentioned above		
43. Cancer or other malignant Tumours of the Buccal Cavity	4	1
44. Cancer or other malignant Tumours of the Stomach or Liver	...	...
45. Cancer or other malignant Tumours of the Peritoneum Intestines, Rectum	...	...
46. Cancer or other malignant Tumours of the Female Genital Organs	...	6
Carried over	30,860	29,431

Diseases	Male	Female
Brought forward ...	30,560	29,431
47. Cancer or other malignant Tumours of the Breast ...	...	2
48. Cancer or other malignant Tumours of the Skin...	10	9
49. Cancer or other malignant Tumours of Organs not specified .	...	...
50. Tumours non-malignant ...	4	3
51. Acute Rheumatism ...	1,132	957
52. Chronic Rheumatism ...	668	766
53. Scurvy (including Barlow's Disease) ...	...	...
54. Pellagra ...	...	...
55. Beri-Beri ...	...	...
56. Rickets ...	42	...
57. Diabetes (not including Insipidus) ...	8	6
58. Anæmia—		
(*a*) Pernicious ...	374	822
(*b*) Other Anæmias and Chlorosis ...	715	776
59. Diseases of the Pituitary Body ...	...	...
60. Diseases of the Thyroid Gland—		
(*a*) Exophthalmic Goitre ...	1	1
(*b*) Other diseases of the Thyroid Gland, Myxœdema ...	...	...
61. Diseases of the Para-Thyroid Glands ...	...	...
62. Diseases of the Thymus ...	...	...
63. Diseases of the Supra-Renal Glands ...	29	54
64. Diseases of the Spleen ...	171	140
65, Leukæmia—		
(*a*) Leukæmia ...	...	...
(*b*) Hodgkin's Disease ...	...	...
66. Alcoholism ...	1	...
67. Chronic poisoning by mineral substances (lead, mercury, &c.) ...	1	...
68. Chronic poisoning by organic substances (Morphia, Cocaine, &c.) ...	...	...
69. Other General Diseases—	88	270
Auto-intoxication ...	...	...
Purpura Hæmorrhagica ...	...	...
Hæmophilia ...	...	...
Diabetes Insipidus ...	...	...
III.—*Affections of the Nervous System and organs of the senses*		
70. Encephalitis (not including Encephalitis Lethargica ...	...	....
71. Menengitis (not including Tuberculos Meningitis or Cerebrospinal Meningitis) ...	...	...
72. Locomotor Ataxia ...	1	1
73. Other affections of the Spinal Cord ...	...	...
74. Apoplexy ...	8	3
(*a*) Hæmorrhage ...	13	8
(*b*) Embolism ...	...	...
(*c*) Thrombosis ...	1	...
75. Paralysis—		
(*a*) Hemiplegia ...	37	19
(*b*) Other Paralyses ...	8	8
76. General Paralysis of the Insane ...		
77. Other forms of Mental Alienation ...	2	...
78. Epilepsy ...	121	72
79. Eclampsia, Convulsions (non-puerperal) 5 years or over ...	11	5
80. Infantile Convulsions ...	69	75
81. Chorea ...	...	6
82. A.—Hysteria ...	6	32
B.—Neuritis ...	79	97
C.—Neuraasthenia ...	34	34
D.—Neuralgia ...	72	86
83. Cerebral Softening ...	68	45
Carried over ...	34,634	33,728

	Diseases	Male	Female
	Brought forward	34,634	33,728
84.	Other affections of the nervous System, such as Paralysis Agitans	404	321
85.	Affections of the Organs of Vision—		
	(*a*) Diseases of the Eye	133	178
	(*b*) Conjunctivitis	375	348
	(*c*) Trachoma	1	1
	(*d*) Tumours of the Eye	...	...
	(*e*) Other affections of the Eye	244	224
86.	Affections of the Ear or Mastoid Sinus	425	418
	IV.—*Affections of the Circulatory System*		
87.	Pericarditis	4	...
88.	Acute Endocarditis or Myocarditis	19	7
89.	Angina Pectoris	117	141
90.	Other Diseases of the Heart	...	1
	(*a*) Valvular—		
	Mitral	79	98
	Aortic	65	44
	Tricuspid	...	...
	Pulmonary	63	74
	(*b*) Myocarditis	1	...
91.	Diseases of the Arteries—		
	(*a*) Aneurism	...	...
	(*b*) Arterio-Sclorosis	110	216
	(*c*) Other diseases	24	27
92.	Embolism or Thrombosis (non-cerebral)	...	2
93.	Diseases of the Veins—		
	Hæmorrhoids	127	40
	Varicose Veins	15	13
	Phlebitis	7	6
94.	Diseases of the Lymphatic System—		
	Lymphangitis	54	49
	Lymphadenitis, Bubo (non-specific)	54	29
95.	Hæmorrhage of undetermined cause	15	22
96.	Other affections of the Circulatory System	97	56
	V.—*Affections of the Respiratory System*		
97.	Diseases of the Nasal Passages—		
	Adenoids	18	10
	Polypus	8	8
	Rhinitis	45	44
	Coryza	90	120
98.	Affections of the Larynx—		
	Laryngitis	54	36
99.	Bronchitis	104	75
	(*a*) Acute	2,158	1,926
	(*b*) Chronic	1,448	1,108
100.	Broncho-Pneumonia	34	24
101.	Pneumonia	175	95
	(*a*) Lobar	32	26
	(*b*) Unclassified	18	3
102.	Pleurisy, Emphysema	36	12
103.	Congestion of the Lungs	3	4
104.	Gangrene of the Lungs	...	...
105.	Asthma	933	712
106.	Pulmonary Emphysema	26	6
107.	Other affections of the Lungs—		
	Pulmonary Spirochætosis	105	43
	VI.—*Diseases of the Digestive System*		
108.	A—Diseases of Teeth or Gums—		
	Caries, Pyorrhæa, &c.	1,509	1,388
	B.—Other affections of the Mouth-Stomatitis	186	180
	Glossitis, &c.	3	4
109.	Affections of the Pharynx or Tonsils—		
	Tonsillitis	258	149
	Pharyngitis	6	15
110.	Affections of the Œsophagus	5	3
	Carried over	44,321	42,034

Diseases	Male	Female
Brought forward ...	44,321	42,034
111. A.—Ulcer of the Stomach ...	14	8
B.—Ulcer of the Duodenum ...	5	1
112. Other affections of the Stomach—		
Gastritis ..	616	612
Dyspepsia, etc. ...	1,713	1,712
113. Diarrhœa and Enteritis—		
Under two years ...	730	555
114. Diarrhœa and Enteritis—		
Two years and over ...	1,210	928
Colitis ...	106	102
Ulceration ...	6	3
Abdominal Colics ...	6	8
114a. Sprue ...	...	...
115. Ankylostomiasis ...	6,307	5,711
116. Diseases due to Intestinal Parasites— ...		
(a) Cestoda (Tænia) ...	2	...
(b) Trematodo (Flukes) ...	...	...
(c) Nematoda (other than Ankylostoma)—		
Ascaris ...	2,691	2,609
Trichocephalus dispar. ...	...	...
Trichina ...	2	...
Dracunculus ...	...	...
Strongylus ...	..	...
Oxyuris ...	9	13
(d) Coccidia ...	...	...
(e) Other parasites ...	...	...
(f) Unclassified ...	149	189
117. Appendicitis ...	68	43
118. Hernia ...	77	5
119. A.—Affections of the Anus, Fistula, &c. ...	60	25
B.—Other affections of the Intestines—		
Enteroptosis ...	24	19
Constipation ...	663	661
120. Acute yellow Atrophy of the Liver ...	...	...
121. Hydatid of the Liver ...	...	...
122. Cirrhosis of the Liver ...	16	2
(a) Alcoholic ...	4	1
(b) Other forms ...	3	6
123. Biliary Calculus ...	...	...
124. Other affections of the Liver— ...	5	3
Abscess ...	17	13
Heptatitis ...	164	146
Cholecystitis ...	19	27
Jaundice ...	67	25
125. Diseases of the Pancreas ...	...	...
126. Peritonitis (of unknown cause) ...	1	...
127. Other affections of the Digestive System ...	571	461
VII.—*Diseases of the Genito-urinary System (non-Venereal)*		
128. Acute Nephritis ...	256	194
129. Chronic ...	114	71
130. A.—Chyluria ...	...	...
B.—Schistosomiasis ...	42	14
131. Other affections of the Kidneys—		
Pyelitis, etc. ...	17	5
132. Urinary Calculus ...	...	4
133. Diseases of the Bladder—		
Cysititis ...	218	164
134. Diseases of the Urethera—		
(a) Stricture ...	17	...
(b) Other ...	1	6
135. Diseases of the Prostate ...	...	1
Hypertrophy ...	4	...
Prostatitis ...	1	...
Carried over ..	60,316	56,381

Diseases	Male	Female
Brought forward	60,316	56,381
136. Diseases (non-Venereal) of the Genital Organs of Man—	9	...
Epididymitis	4	...
Orchitis	144	...
Hydrocele	99	...
Ulcer of Penis	7	...
137. Cysts or other non-malignant Tumours of the Ovaries	...	26
138. Salpingitis—		
Abscess of the Pelvis	...	30
139. Uterine Tumours (non-malignant)	...	15
140. Uterine Hœmorrhage non-puerperal	...	229
141. A.—Metritis	...	47
B.—Other affections of the Female Genital Organs—	...	51
Displacement of Uterus	...	41
Amenorrhœa	...	287
Dysmenorrhœa	...	142
Leucorrhœa	...	190
142. Diseases of the Breast (non-puerperal)—		
Mastitis	...	...
Abscess	...	167
VIII.—*Puerperal State*		
143. A.—Normal Labour	...	40
B.—Accidents of Pregnancy—	...	24
(*a*) Abortion	...	9
(*b*) Ectopic Gestation	..	1
(*c*) Other accidents of Pregnancy	...	66
144. Puerperal Hæmorrhage	...	2
145. Other accidents of Parturition	...	5
146. Puerperal Septicæmia	...	...
147. Phlegmasia Dolens	...	...
148. Puerperal Eclampsia	...	1
149. Sequelæ of Labour	...	...
150. Puerperal affections of the Breast	...	...
IX.—*Affections of the Skin and Cellular Tissues*		
151. Gangrene	1	...
152. Boil—	32	18
Carbuncle	63	32
Ulcers	88	59
153. Abscess—	299	216
Whitlow	117	73
Cellulitis	610	269
154. A.—Tinea	18	10
B—Scabies	1,290	1,004
155. Other Diseases of the Skin—	297	169
Brythema	21	13
Urticaria	17	5
Eczema	436	405
Herpes	30	26
Psoriasis	98	54
Elephantiasis	5	4
Myiasis	1	1
Chigœs	...	...
Cutaneous Leishmaniasis	...	1
Dermatitis	21	24
Ulcers	28	10
Impetigo	48	31
X.—*Diseases of the Bones and Organs of Locomotion (other than Tuberculous)*		
156. Diseases of Bones—		
Osteitis	102	49
157. Diseases of the Joints—		
Arthritis	108	75
Synovitis	21	4
Carried over	64,330	60,306

Disease	Male	Female
Brought forward ...	64,330	60,306
158. Other Diseases of Bones or Organs of Locomotion	23	15
XI.—*Malformations*		
159. Malformations—		
Hydrocephalus ...	1	1
Hypospadias ...	...	1
Spina Bifida, &c. ...	...	...
XII.—*Diseases of Infancy*		
160. Congenital Debility ...	14	25
161. Premature Birth ...	...	...
162. Other affections of Infancy ...	16	5
163. Infant neglect (infants of three months or over)	6	4
XIII.—*Affections of Old Age*		
164. Senility— ...	19	37
Senile Dementia ...	99	103
XIV.—*Affections produced by External Causes*		
165. Suicide by Poisoning ...	...	...
166. Corrosive Poisoning (intentional) ...	...	...
167. Suicide by Gas Poisoning ...	...	...
168. Suicide by Hanging or Strangulation ...	...	...
169. Suicide by Drowning ...	...	...
170. Suicide by Firearms ...	...	...
171. Suicide by Cutting or Stabbing Instruments ...	...	...
172. Suicide by jumping from a height ...	...	...
173. Suicide by crushing ...	...	...
174. Other Suicides ...	...	...
175. Food Poisoning—		
Botulism ...	...	...
176. Attacks of poisonous—		
Snake Bite ...	...	...
Insect Bite ...	...	...
177. Other accidental Poisonings ...	...	1
178. Burns (by fire) ...	15	26
179. Burns (other than by fire) ...	15	13
180. Suffocation (accidental) ...	...	...
181. Poisoning by Gas (accidental) ...	...	...
182. Drowning (accidental) ...	...	...
183. Wounds by Firearms (war excepted) ...	...	...
184. Wounds (by cutting or stabbing Instruments)...	414	150
185. Wounds (by Fall) ...	246	116
186. Wounds (by Dynamites) ...	...	11
187. Wounds (by Machinery) ...	3	...
188. Wounds (crushing *e.g.* railway accidents, etc.)...	15	11
189. Injuries inflicted by Animals, Bites, Kicks, etc.)	40	17
190. Wounds inflicted on Active Service ...	...	...
191. Executions of civilians by belligerents ...	...	...
192. A.—Over fatigue ...	...	...
B.—Hunger or Thirst ...	1	...
193. Exposure to Cold, Frost bite, etc. ...	...	...
194. Exposure to heat—		
Headstroke ...	...	...
Sunstroke ...	...	...
195. Lightning Stroke ...	..	...
196. Electric Shock ...	...	...
197. Murder by Firearms ..	...	...
198. Murder by cutting or stabbing Instruments ...	...	...
199. Murder by other means ...	...	...
200. Infanticide (Murder of an infant under one year)	...	...
201. A.—Dislocation ...	18	4
B.—Sprain ...	62	22
C.—Fracture ...	104	37
202. Other external Injuries ..	481	193
203. Deaths by Violence of unknown cause ...	...	...
XV.—*Ill-Defined Diseases*		
204. Sudden Deaths (cause unknown)— ...	...	...
Carried over ...	65,922	61,098

Disease		Male	Female
Brought forward	...	65,922	61,098
205. A.—Diseases not already specified or ill-defined		217	174
Ascites	...	45	27
Œdema	...	21	26
Asthenia	...	...	...
Shock	...	1	...
Hyperprexia	...	15	17
B.—Malingering	...	44	...
Total	...	66,265	61,342
I.—Epidemic, Endemic and Infectious Diseases..		30,856	29,424
II.—General Diseases not mentioned above	...	3,248	3,813
III.—Affections of the Nervous System and Organs of the Senses	...	2,112	1,981
IV.—Affections of the Circulatory System	...	851	825
V.—Affections of the respiratory System	...	5,287	4,252
VI.—Diseases of the Digestive System	...	17,292	15,627
VII.—Diseases of the Genito-Urinary System (*non-venereal*)	...	933	1,684
VIII.—Puerperal State	..	...	148
IX.—Affections of the Skin and Cellular Tissues	...	3,520	2,424
X.—Diseases of Bones and Organs Locomotion (*other than Tuberculous*)	...	254	143
XI.—Malformations	...	1	2
XII.—Diseases of Infancy	...	36	34
XIII.—Affections of old age	...	118	140
XIV.—Affections produced by external causes	...	1,414	601
XV.—Ill-defined diseases	...	343	244
Total	...	66,265	61,342